

CHAPTER 6

Finance

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Summary

Exhibit 6-1 compares the key highway and transit statistics discussed in this chapter with the values shown in the last report. The first data column contains the values reported in the 2002 C&P report, which were based on 2000 data. Where the 2000 data have been revised, updated values are shown in the second column. The third column contains comparable values, based on 2002 data.

Exhibit 6-1 Comparison of Highway and Transit Finance Statistics with Those in the 2002 C&P Report			
Statistic	2000 Data		2002 Data
	2002 C&P Report	Revised as of 12/23/04	
Total Funding for Highways (all govts.)	\$128.7 bil	\$131.1 bil	\$134.8 bil
Total Funding for Transit	\$30.8 bil		\$36.5 bil
Total Public Funding for Transit	\$21.0 bil		\$26.6 bil
Percent of Public Funding for Transit Funded by Federal Government	25%		23.7%
Total Highway Expenditures (all govts.)	\$127.5 bil	\$122.7 bil	\$135.9 bil
Percent of Total Highway Expenditures Funded by Federal Government	21.7%	22.4%	24.1%
Total Highway Capital Outlay (all govts.)	\$64.6 bil	\$61.3 bil	\$68.2 bil
Percent of Total Highway Capital Outlay Funded by Federal Government	39.9%	42.6%	46.1%
Percent of Total Highway Capital Outlay Used for System Preservation	52.0%		52.6%
Total Transit Capital Outlay	\$9.0 bil		\$12.3 bil
Percent of Total Transit Capital Outlay Funded by Federal Government	47%		40.6%
Percent of Total Transit Capital Outlay Used for Rail	63%		71%
Total Highway-User Revenues (motor-fuel and vehicle taxes and tolls)	\$100.6 bil	\$99.9 bil	\$100.5 bil
Highway-User Revenues Used for Roads	\$81.0 bil	\$81.3 bil	\$79.6 bil
Total Transit Fares and Other System-Generated Revenue	\$9.8 bil		\$9.9 bil

Highways and Bridges

All levels of government generated \$134.8 billion in 2002 to be used for highways and bridges. In addition to this total, \$1.1 billion was drawn from reserves, so cash outlays for highways and bridges in 2000 totaled \$135.9 billion. Highway expenditures increased 10.8 percent between 2000 and 2002, from \$122.7 billion to \$135.9 billion. Highway expenditures grew more quickly than inflation over this period, rising 7.5 percent in constant dollar terms (based on the FHWA Construction Bid Price Index for highway capital outlay and the Consumer Price Index [CPI] for all other types of highway expenditures). Since 2000, highway capital expenditures by all levels of government grew 11.2 percent to \$68.2 billion in 2002. The Federal government contributed \$31.2 billion (46.1 percent) of total highway capital expenditures.

In 2002, 52.6 percent of highway capital outlay was used for system preservation, up marginally from 52.0 percent in 2000. Highway user revenues (the total amount generated from motor-fuel taxes, motor-vehicle taxes and fees, and tolls imposed at the Federal, State, and local level) rose slightly, from \$99.9 billion in 2000 to \$100.5 billion in 2002. Of this total, \$79.6 billion (79.2 percent) was used for highway programs.

Q. What accounts for the large revisions in the year 2000 highway expenditure data shown in Exhibit 6-1?

A. Much of the data reported in this chapter relies on Table HF-10 in *Highway Statistics*. The local data shown in this table are estimated, since local government financial data reporting lags a year behind that of State governments. These data are subsequently revised the following year, in Table HF-10A.

Typically these revisions are relatively small, and not significant in term of C&P report findings. However, in 2000 the initial estimate in Table HF-10 had predicted a local capital outlay figure of \$16.7 billion, while the final Table HF-10A numbers issued the following year showed the actual figure was only \$14.3 billion. State capital outlay was also revised downward by \$0.9 billion. Based on these revised figures, the portion of total highway capital outlay funded by the Federal government in 2000 was 42.6 percent, which is significantly higher than the 39.9 percent figure based on the initial estimates.

Transit

In 2002, \$36.5 billion was available from all sources to finance transit investment and operations. Transit funding comes from two major sources: *public funds* allocated by Federal, State, and local governments; and *system-generated revenues* earned for the provision of transit services. In 2002 Federal funding was \$6.3 billion (17 percent of total transit funds), State and local funding was \$26.6 billion (56 percent of total transit funds) and system-generated revenues were \$9.9 billion (27 percent of total transit funds). Between 2000 and 2002 Federal funding increased by 15.4 percent, State and local funding increased by 22.0 percent and system-generated revenues by 0.6 percent.

Funding for capital investments by transit operators in the United States comes principally from public sources. Capital investments include the design and construction of new transit systems and extensions to

Q. How was the \$31.2 billion figure for Federal contributions to total highway capital expenditures derived, and why does this figure differ from amounts that appear in other documents (e.g., the President's Budget)?

A. The Federal expenditures shown in this report are intended to reflect the highway-related activities of all Federal agencies, rather than just those of the traditional transportation agencies such as FHWA. The figures shown in this report tie back to Tables HF-10 and HF-10A in *Highway Statistics*, which in turn are linked to Tables FA-5 and FA-5R, which list highway expenditures on an agency-by-agency basis at the Federal level. These data represent cash outlays, rather than obligations (which are more relevant in terms of the annual Federal budget) or authorizations (which are more relevant in terms of multiyear authorization bills). Since the financial data reported by State and local governments are compiled on a cash basis, this report uses the same basis for Federal expenditures to ensure consistency.

The Federal figures reported in Table FA-5 rely on data from a mix of Federal, State, and local sources. In some cases, this table captures Federal funding for highways that are not otherwise tracked at the Federal level. For example, under current law, 25 percent of the receipts derived from Federal timber sales are to be paid to States for public roads and schools in the counties where forests are situated. At the time these payments are made, it is unknown what portion will ultimately be used for roads as opposed to schools. However, once States have expended these funds, they are able to report to the FHWA what portion was used for roads, so that this information may be included in Table FA-5.

Note that the Federal highway funding figures in this report exclude any amounts funded from the Highway Account of the Federal Highway Trust Fund that were used for transit purposes as identified in Table HF-10. Such amounts would appear as Federal funding for transit in this report.

The \$31.2 billion figure cited for the Federal contribution to total capital expenditures represents total Federal expenditures for highway purposes of \$32.8 billion less direct Federal expenditures for noncapital purposes such as maintenance on Federally owned roads, administrative costs, and research.

current systems (also know as “New Starts”), and the modernization of existing fixed assets. In 2002, total public transit agency expenditures for capital investment were \$12.3 billion in current dollars and accounted for 34.9 percent of total transit expenditures. Federal funds accounted for \$5.0 billion of total transit agency capital expenditures (\$4.2 billion in 2000), State funds for \$1.4 billion (\$1.0 billion in 2000), and local funds \$5.9 billion (\$3.8 billion in 2000).

In areas with populations over 200,000, Federal funds may not be spent on operating expenses. This limitation means that a higher proportion of Federal funds are spent on capital investments, while State, local, and system-generated funds are more likely to be spent on operating expenses. Nevertheless, as local governments significantly increased their funding for capital investments between 2000 and 2002, the Federal share of total capital expenditures fell from 47 percent in 2000 to 41 percent in 2002.

Transit operating expenditures include wages, salaries, fuel, spare parts, preventive maintenance, support services, and leases used in providing transit service. In 2002, \$24.2 billion was available for operating expenses and accounted for 65.1 percent of total available funds. Of this amount, \$1.3 billion was available from the Federal government, \$6.1 billion from State governments, \$6.9 billion from local governments, and \$9.9 billion from system-generated revenues. In 2002, transit operators’ actual operating expenditures were \$22.9 billion compared with \$20.0 billion in 2000, an increase of 14.5 percent. This was a larger percentage increase than experienced in any other 2-year period since 1993. Between 2000 and 2002, operating expenses for demand response systems and light rail increased more rapidly than operating expenses for other modes both in total and on a per passenger mile basis.

Highway and Bridge Finance

This section presents information on the revenue sources supporting public investment in highways and bridges and on the types of investments that are being made by all levels of government. This is followed by a discussion of the current and historic roles of Federal, State, and local governments in highway funding. The section concludes with a more detailed analysis of capital expenditures.

Revenue Sources

Exhibit 6-2 shows that all levels of government generated \$134.8 billion in 2002 to be used for highways and bridges. Actual cash expenditures for highway and bridge purposes totaled \$135.9 billion in 2002; \$1.1 billion was drawn from reserves by various governmental units for additional expenditure on highways or bridges. The \$4.2 billion shown as drawn from reserves in the Federal column indicates that the cash balance of the Highway Account of the Federal Highway Trust Fund (HTF) declined by that amount during 2002.

Exhibit 6-2		Revenue Sources for Highways, 2002 (Billions of Dollars)				
		Federal	State	Local	Total	Percent
User Charges						
Motor-Fuel Taxes		\$25.4	\$27.8	\$1.0	\$54.2	40.2%
Motor-Vehicle Taxes and Fees		1.5	16.7	0.7	18.8	14.0%
Tolls		0.0	5.2	1.4	6.6	4.9%
Subtotal		\$26.8	\$49.7	\$3.1	\$79.6	59.1%
Other						
Property Taxes and Assessments		0.0	0.0	6.5	6.5	4.8%
General Fund Appropriations		1.5	4.7	14.1	20.3	15.1%
Other Taxes and Fees		0.2	3.1	4.2	7.5	5.6%
Investment Income and Other Receipts		0.0	2.9	5.2	8.1	6.0%
Bond Issue Proceeds		0.0	8.0	4.7	12.7	9.5%
Subtotal		\$1.7	\$18.7	\$34.7	\$55.2	40.9%
Total Revenues		\$28.6	\$68.4	\$37.8	\$134.8	100.0%
Funds Drawn from or (Placed in) Reserves		\$4.2	\$0.6	(\$3.7)	\$1.1	0.8%
Total Expenditures Funded During 2002		\$32.8	\$69.0	\$34.1	\$135.9	100.8%

Source: Highway Statistics 2002, Table HF-10, and unpublished FHWA data.

Highway-user charges, including motor-fuel taxes, motor-vehicle taxes and fees, and tolls, were the source of 59.1 percent of the \$134.8 billion of total revenues for highways and bridges in 2002. The remaining 40.9 percent of revenues came from a number of sources, including local property taxes and assessments, other dedicated taxes, general funds, bond issues, investment income, and other miscellaneous sources. Development fees and special district assessments are included under “Investment Income and Other Receipts” in Exhibit 6-2.

Q.

Were all revenues generated by motor-fuel taxes, motor-vehicle taxes and fees, and tolls in 2002 used for highways?

A.

No. The \$79.6 billion identified as highway-user charges in Exhibit 6-2 represents only 79.2 percent of total highway-user revenues, defined as all revenues generated by motor-fuel taxes, motor-vehicle taxes, and tolls. Exhibit 6-3 shows that combined highway-user revenues collected in 2002 by all levels of government totaled \$100.5 billion.

Exhibit 6-3

Disposition of Highway-User Revenue

Portion used for:	Federal	State	Local	Total
Highways	26.8	49.7	3.1	79.6
Transit	5.7	3.2	0.5	9.4
Other	1.3	10.0	0.2	11.5
Total Collected	33.8	62.9	3.8	100.5

Source: Highway Statistics 2002, Table HF-10 and unpublished FHWA data.

In 2002, \$9.4 billion of highway-user revenues were used for transit, and \$11.5 billion were used for other purposes, such as ports, schools, collection costs, and general government activities. The \$1.3 billion shown as Federal highway-user revenues used for other purposes includes fuel tax proceeds deposited into the Leaking Underground Storage Tank (LUST) trust fund, as well as the portion of gasohol tax receipts that was retained by the general fund for deficit reduction.

The \$5.7 billion shown as Federal highway-user revenues used for transit includes \$4.6 billion deposited into the Transit Account of the HTF, as well as \$1.1 billion that was deposited in the Highway Account of the HTF that States elected to use for transit purposes. Flexible funding provisions that allow States to reprogram certain highway program funds for transit purposes are discussed in the "Transit Finance" section of this chapter.

The degree to which highway programs are funded by highway-user charges differs widely among the different levels of government. At the Federal level, 93.9 percent of highway revenues came from motor-fuel and motor-vehicle taxes in 2002. The remainder came from general fund appropriations, timber sales, lease of Federal lands, oil and mineral royalties, and motor carrier fines and penalties.

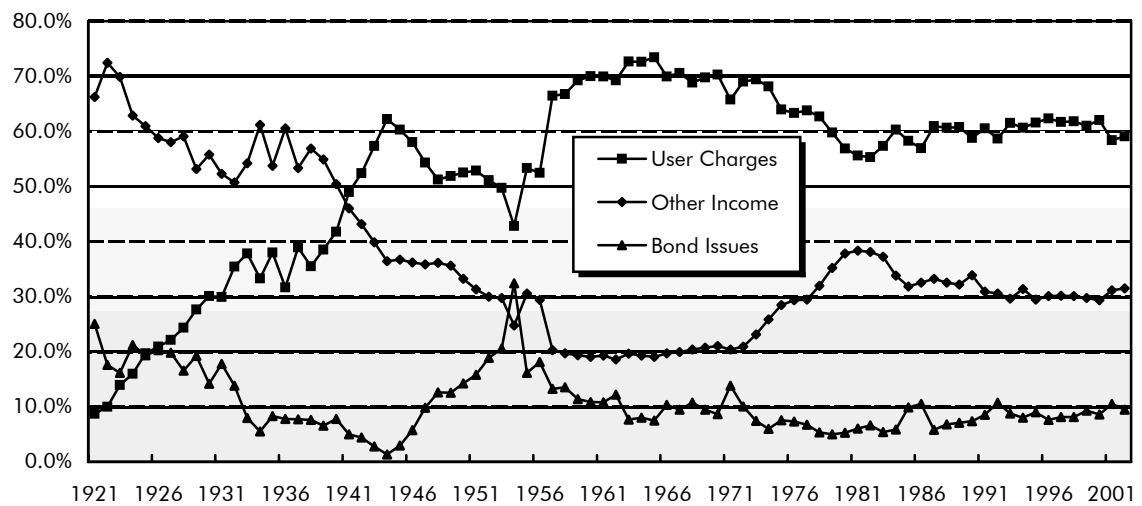
Highway-user charges also provided the largest share, 72.6 percent, of highway revenues at the State level in 2002. Bond issue proceeds were another significant source of funding, providing 11.7 percent of highway funds at the State level. The remaining 15.3 percent of State highway funding came from general fund appropriations, other State taxes and fees, investment income, and other miscellaneous revenue sources.

Many States do not permit local governments to impose motor-fuel and motor-vehicle taxes, or they cap them at relatively low levels. Therefore, at the local government level, only 8.2 percent of highway funding was provided by highway-user charges in 2002. Local general funds, property taxes, and other taxes and fees were the sources of 65.5 percent of local highway funding. Bond issue proceeds provided 12.5 percent of local highway funding, while investment income and miscellaneous receipts provided the remaining 13.8 percent.

Historical Revenue Trends

Exhibits 6-4 and 6-5 show how highway revenue sources have varied over time. Exhibit 6-4 identifies the different sources of highway revenue since 1921

for all levels of government combined. Exhibit 6-5 identifies the percentage of highway revenue derived from user charges by each level of government since 1957. Some of the variation in revenue sources shown in the graph portion of Exhibit 6-4 is caused by changes in the share of funding provided by each level of government over time; this topic will be discussed later in this chapter. In the early 1920s, when local government bore much of the responsibility for highway funding, property taxes were the primary source of revenues for highways. Property taxes have, however, become a much less significant source of revenue over time, dropping to 4.8 percent of total highway revenues in 2002. The share of total highway revenues generated by bond proceeds has fluctuated over time, reaching a high of 32.4 percent in 1954. Since that time, combined highway and bridge programs have become less dependent on debt financing; this share has not exceeded 11 percent of revenues since 1971.

Exhibit 6-4
Highway Revenue Sources by Type, All Units of Government, 1921–2002


Billions of Dollars								
Year	Fuel and Vehicle Taxes	Tolls	Property Taxes	General Fund Approps.	Other Taxes and Fees	Investment Income and Other	Issue Proceeds	Total
1921	\$0.1	\$0.0	\$0.7	\$0.1	\$0.0	\$0.1	\$0.4	\$1.4
1925	0.4	0.0	0.9	0.2	0.0	0.0	0.4	2.0
1929	0.7	0.0	1.2	0.2	0.0	0.0	0.5	2.7
1933	0.7	0.0	0.6	0.4	0.0	0.0	0.2	1.9
1937	1.0	0.0	0.4	1.0	0.0	0.0	0.2	2.7
1941	1.2	0.1	0.4	0.8	0.0	0.0	0.1	2.6
1945	1.1	0.1	0.3	0.4	0.0	0.0	0.1	1.9
1949	2.1	0.1	0.4	1.0	0.0	0.1	0.5	4.3
1953	3.1	0.2	0.6	1.2	0.0	0.2	1.3	6.5
1957	5.6	0.4	0.8	0.7	0.0	0.2	1.2	9.0
1961	7.7	0.5	0.9	1.0	0.1	0.3	1.3	11.8
1965	9.8	0.7	1.1	1.1	0.2	0.4	1.1	14.3
1969	13.0	0.9	1.3	1.9	0.3	0.6	1.9	19.9
1973	17.0	1.2	1.5	3.0	0.4	1.1	2.0	26.2
1977	19.6	1.4	1.8	5.4	0.8	1.8	2.2	33.0
1981	21.8	1.8	2.5	8.8	1.4	3.7	2.6	42.5
1985	33.6	2.2	3.5	9.9	1.9	4.3	6.1	61.4
1989	41.4	2.9	4.3	10.8	2.9	5.5	5.2	72.8
1993	50.8	3.6	4.7	10.6	4.0	6.8	7.8	88.4
1995	55.4	3.9	4.9	13.2	3.7	6.6	8.6	96.3
1997	61.6	4.7	5.3	15.1	5.0	7.0	8.8	107.4
1998	64.3	4.7	5.8	14.5	5.1	8.2	9.0	111.6
1999	69.1	5.1	5.8	17.2	6.4	6.8	11.3	121.7
2000	75.6	5.7	6.1	19.3	5.7	7.3	11.3	131.1
2001	71.8	5.9	6.3	19.1	8.0	8.0	14.0	133.1
2002	73.1	6.6	6.5	20.3	7.5	8.1	12.7	134.8

Sources: Highway Statistics Summary to 1995 Table HF-210; Highway Statistics Tables HF-10A and HF-10, various years.

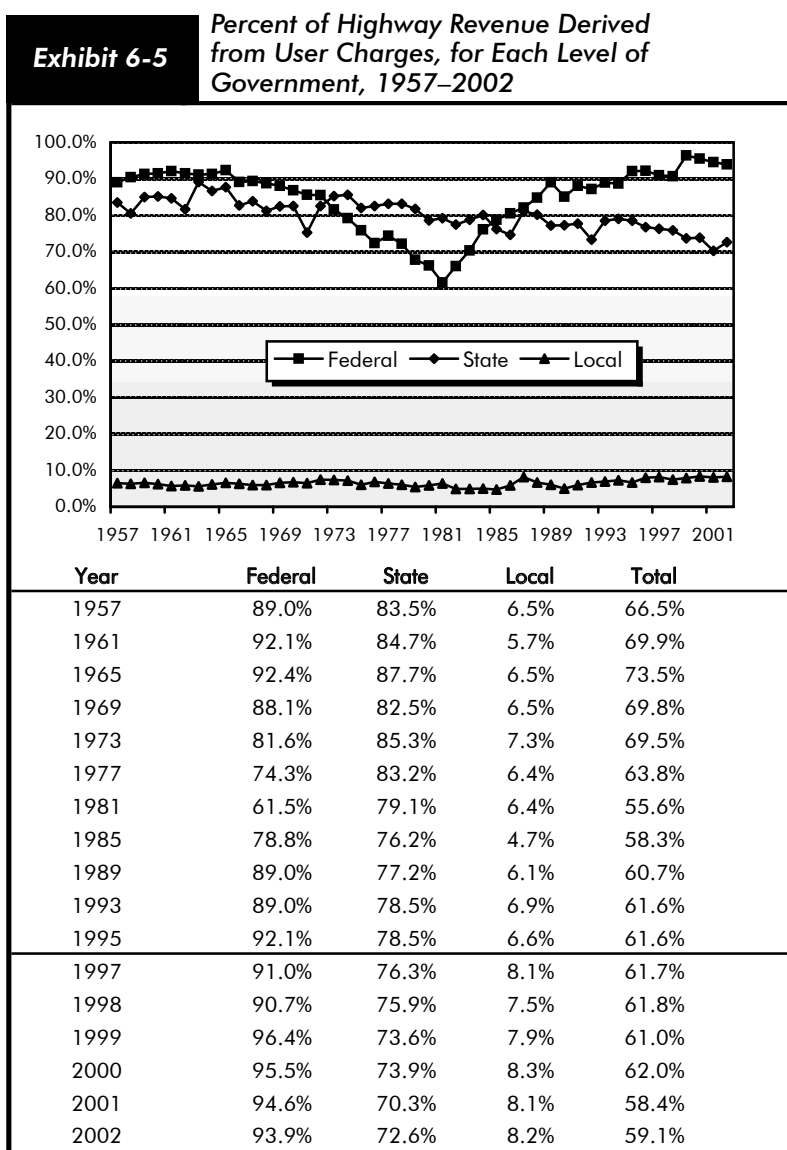
Since the passage of the Federal-Aid Highway Act of 1956 and the establishment of the Federal HTE, motor-fuel and motor-vehicle tax receipts have consistently provided a majority of the combined revenues raised for highway and bridge programs by all levels of government.

After peaking at an all-time high of 73.5 percent of highway revenues in 1965, the share represented by highway-user charges dropped to 55.2 percent in 1982. As shown in Exhibit 6-4, since that time, the percentage has rebounded and stabilized in a range of about 60 to 62 percent, though it was slightly below this range in 2001 and 2002.

A corresponding pattern can be observed in the percentage of Federal highway revenue derived from highway-user charges as shown by the Federal line in Exhibit 6-5. During the early years of the HTE, over 90 percent of highway revenues at the Federal level came from fuel and vehicle taxes. From the late 1960s to early 1980s, this percentage declined, to a low of 61.6 percent in 1981. During this period, Federal motor-fuel taxes did not increase, and a growing percentage of Federal highway funding came from other sources. In 1981, general fund revenues of \$2.6 billion provided 25.1 percent of total Federal highway funding. Since 1981, Federal motor-fuel taxes have increased significantly, and Federal general fund revenues used for highways have declined. As a result, the portion of Federal highway revenue derived from highway-user charges has increased, reaching an all-time high of 96.4 percent in 1999, and remaining at nearly 94 percent in 2002.

Exhibit 6-5 shows that the share of State government highway funding contributed by highway-user charges has generally declined over time. From 1995 to 2002, the percentage dropped from 78.5 percent to 72.6 percent. Over the same period, States grew more reliant on debt financing, as bond proceeds grew from 8.6 percent to 11.7 percent, and exceeding 13 percent in 1999 and 2001.

Highway-user charges have never been as significant a source of highway revenue at the local government level as at the Federal or State levels, for the reasons outlined earlier. In recent years, the share of local government highway funding



Sources: Highway Statistics Summary to 1995, Table HF-210; Highway Statistics, various years, Tables HF-10A and HF-10.

derived from highway-user charges has been slightly higher than it was historically, exceeding 8 percent each year from 2000 to 2002.

Highway Expenditures

Exhibit 6-2 indicates that total expenditures for highways in 2002 equaled \$135.9 billion and identifies the portion of this total funded by each level of government. *Exhibit 6-6* classifies this total by type of expenditure and by the level of government. The “Federal,” “State,” and “Local” columns in this table indicate which level of government made the direct expenditures, while “Funded by...” in the column “Current Expenditures” indicates the level of government that provided the funding for those expenditures. (Note that all figures cited as “expenditures,” “spending,” or “outlays” in this report represent cash expenditures rather than authorizations or obligations).

While the Federal government funded \$32.8 billion (24.1 percent) of total highway expenditures of \$135.9 billion in 2002, the majority of the Federal government’s contribution to highways consists of grants to State and local governments. Direct Federal spending on capital outlay, maintenance, administration, and research amounted to only \$1.8 billion (1.3 percent). The remaining \$31.0 billion was in the form of transfers to State and local governments.

Q.

Why did the percentage of Federal revenue for highways derived from highway-user charges increase sharply between 1998 and 1999?

A.

In 1998, 4.8 percent of total Federal revenues for highways came from interest income credited to the Highway Account of the HTF based on its invested balance. Due to a legislative change, starting in Federal fiscal year (FY) 1999, the HTF no longer earns interest on its balances. With this revenue source eliminated, the Federal highway program now relies even more heavily on motor-fuel and motor-vehicle taxes for funding.

Exhibit 6-6		Direct Expenditures for Highways, by Expending Agencies and by Type				
Billions of Dollars, 2002		Federal	State	Local	Total	Percent
Current Expenditures						
Capital Outlay						
Funded by Federal Government		\$0.4	\$29.6	\$1.5	\$31.5	23.1%
Funded by State or Local Gov'ts		0.0	22.2	14.5	36.7	27.0%
Subtotal		\$0.4	\$51.8	\$16.0	\$68.2	50.2%
Noncapital Expenditures						
Maintenance		0.2	9.7	15.8	25.7	18.9%
Highway and Traffic Services		0.0	3.9	3.6	7.5	5.5%
Administration		1.2	5.9	3.6	10.7	7.9%
Highway Patrol and Safety		0.0	6.3	5.4	11.7	8.6%
Interest on Debt		0.0	3.7	1.8	5.4	4.0%
Subtotal		\$1.4	\$29.5	\$30.1	\$61.0	44.9%
Total, Current Expenditures		\$1.8	\$81.3	\$46.1	\$129.1	95.0%
Bond Retirement		\$0.0	\$4.4	\$2.4	\$6.8	5.0%
Total All Expenditures						
Funded by Federal Government		1.8	29.6	1.5	32.8	24.1%
Funded by State Governments		0.0	54.4	14.6	69.0	50.8%
Funded by Local Governments		0.0	1.7	32.4	34.1	25.1%
Grand Total		\$1.8	\$85.7	\$48.5	\$135.9	100.0%

Source: Highway Statistics 2002, Table HF-10 and unpublished FHWA data.

State governments combined \$29.6 billion of Federal funds with \$54.4 billion of State funds and \$1.7 billion of local funds to make direct expenditures of \$85.7 billion (63.0 percent). Local governments combined \$1.5 billion of Federal funds with \$14.6 billion of State funds and \$32.4 billion of local funds to make direct expenditures of \$48.5 billion (35.7 percent).

Q. What basis is used for distinguishing between capital expenditures and maintenance expenditures?

A. The classification of the revenue and expenditure items in this report is based on definitions contained in *A Guide to Reporting Highway Statistics*, the instructional manual for States providing financial data for the *Highway Statistics* publication. This manual indicates that the classification of highway construction and maintenance expenditures should be based on criteria provided in the American Association of State Highway and Transportation Officials publication, *AASHTO Maintenance Manual – 1987*.

Other definitions of maintenance are used by different organizations. Some resurfacing, restoration, and rehabilitation projects that meet this report's definition of capital outlay might be classified as maintenance activities in internal State or local accounting systems.

Q. How are "maintenance" and "highway and traffic services" defined in this report?

A. Maintenance in this report includes routine and regular expenditures required to keep the highway surface, shoulders, roadsides, structures, and traffic control devices in usable condition. This includes spot patching and crack sealing of roadways and bridge decks, and the maintenance and repair of highway utilities and safety devices such as route markers, signs, guardrails, fence, signals, and highway lighting.

Highway and traffic services include activities designed to improve the operation and appearance of the roadway. This includes items such as the operation of traffic control systems, snow and ice removal, highway beautification, litter pickup, mowing, toll collection, and air quality monitoring.

Types of Highway Expenditures

Current highway expenditures can be divided into two broad categories: noncapital and capital. Noncapital highway expenditures include maintenance of highways, highway and traffic services, administration, highway law enforcement, highway safety, and interest on debt. Highway capital outlay consists of those expenditures associated with highway improvements, including land acquisition and other right-of-way costs; preliminary and construction engineering; new construction, reconstruction, resurfacing, rehabilitation, and restoration costs of roadways, bridges, and other structures; and installation of traffic service facilities such as guardrails, fencing, signs, and signals. Bond retirement is not part of current expenditures, but it is included in the figures cited for total highway expenditures in this report.

As shown in Exhibit 6-6, all levels of government spent \$68.2 billion on capital outlay in 2002, or 50.2 percent of total highway expenditures. Highway capital outlay expenditures are discussed in more detail later in this chapter.

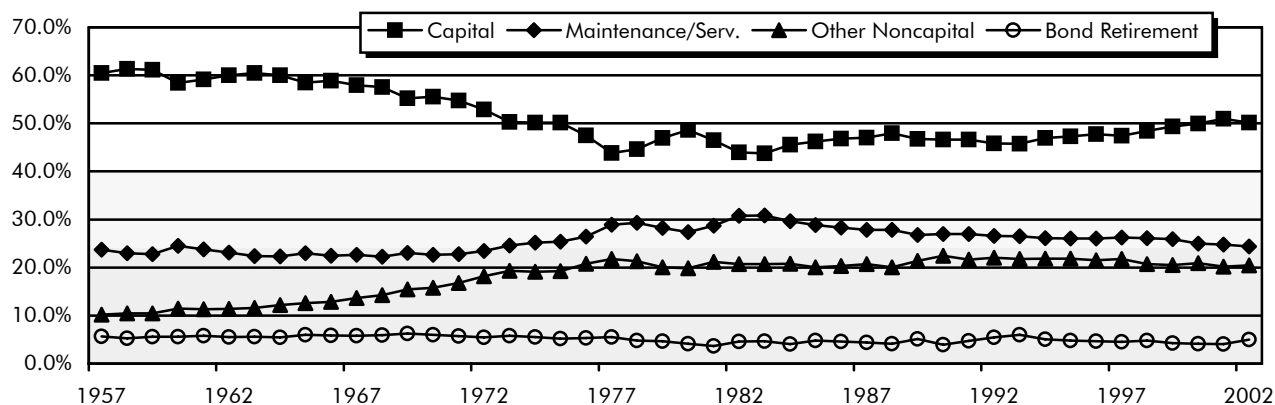
Current noncapital expenditures consumed \$61.0 billion (44.9 percent), while the remaining \$6.8 billion (5.0 percent) went for bond redemption. Most Federal funding for highways goes for capital items. Noncapital expenditures are funded primarily by State and local governments. In 2002, State and local noncapital expenditures were close to equal, as State governments spent \$29.5 billion while local governments spent \$30.1 billion. The majority of maintenance expenditures occurred at the local government level, or \$15.8 billion (61.4 percent) of the \$25.7 billion total.

Historical Expenditure and Funding Trends

Exhibits 6-7 and 6-8 provide historical perspective for the 2002 values shown in Exhibit 6-6. Exhibit 6-7 shows how the composition of highway expenditures by all levels of government combined has changed over time. Exhibit 6-8 shows the amounts provided by each level of government to finance those expenditures and the share of funding provided by the Federal government for total highway expenditures and for highway capital outlay.

The increased Federal funding for highways available under the Transportation Equity Act for the 21st Century (TEA-21) contributed to a 33.3 percent increase (from \$102.0 billion to \$135.9 billion) in total highway spending by all levels of government between 1997 and 2002. Capital outlay by all levels of government increased by 41.0 percent from \$48.4 billion to \$68.2 billion over the same period.

Exhibit 6-7 Expenditures for Highway by Type, All Units of Government, 1957–2002



(Billions of Dollars)

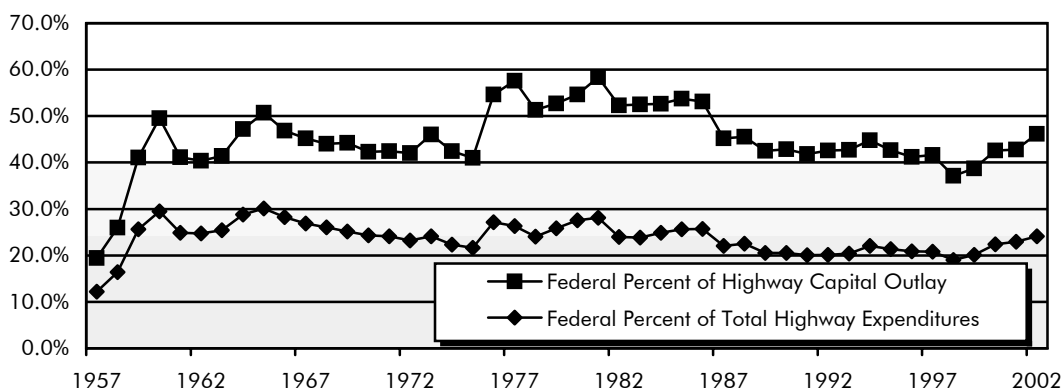
Year	Capital Outlay	Maintenance and Services	Other Noncapital				Debt Retirement	Total
			Administration	Highway Patrol & Safety	Interest on Debt	Total Other Noncapital		
1957	\$5.6	\$2.2	\$0.4	\$0.3	\$0.3	\$0.9	\$0.5	\$9.3
1961	\$6.8	\$2.7	\$0.5	\$0.3	\$0.4	\$1.3	\$0.7	\$11.5
1965	\$8.4	\$3.3	\$0.8	\$0.5	\$0.5	\$1.8	\$0.9	\$14.3
1969	\$10.4	\$4.3	\$1.1	\$1.1	\$0.7	\$2.9	\$1.2	\$18.8
1973	\$12.2	\$5.9	\$1.7	\$1.9	\$1.0	\$4.7	\$1.4	\$24.2
1977	\$13.1	\$8.6	\$2.4	\$2.8	\$1.3	\$6.5	\$1.6	\$29.8
1981	\$19.7	\$12.2	\$3.4	\$3.9	\$1.7	\$9.0	\$1.6	\$42.4
1985	\$26.6	\$16.6	\$4.2	\$5.2	\$2.1	\$11.5	\$2.8	\$57.5
1989	\$33.1	\$19.0	\$5.7	\$6.6	\$2.8	\$15.2	\$3.6	\$70.9
1993	\$39.5	\$22.9	\$7.9	\$7.2	\$3.7	\$18.8	\$5.2	\$86.4
1995	\$44.2	\$24.3	\$8.4	\$8.2	\$3.8	\$20.4	\$4.5	\$93.5
1997	\$48.4	\$26.8	\$8.3	\$9.8	\$4.2	\$22.2	\$4.6	\$102.0
1998	\$52.3	\$28.2	\$8.5	\$9.4	\$4.4	\$22.3	\$5.1	\$108.0
1999	\$57.2	\$30.0	\$9.0	\$10.4	\$4.4	\$23.7	\$4.9	\$115.9
2000	\$61.3	\$30.6	\$10.0	\$11.0	\$4.6	\$25.6	\$5.1	\$122.7
2001	\$66.7	\$32.4	\$10.2	\$11.4	\$4.8	\$26.4	\$5.3	\$130.8
2002	\$68.2	\$33.2	\$10.7	\$11.7	\$5.4	\$27.8	\$6.8	\$135.9

Sources: Highway Statistics Summary to 1995, Table HF-210; Highway Statistics, various years, Tables HF-10A and HF-10.

The percentage of total highway expenditures that went for capital outlay peaked at 61.3 percent in 1958. Subsequently, capital outlay's share of total spending gradually declined to a low of 43.8 percent in 1983. As shown in Exhibit 6-7, this share has climbed back up, exceeding 50 percent for the first time since 1975 in 2001 and 2002.

Exhibit 6-8 shows that the portion of total highway funding provided by the Federal government rose from 20.8 to 24.1 percent from 1997 to 2002. The Federal share of capital funding also increased significantly (from 41.6 to 46.1 percent) over this same period. Federal cash expenditures for capital purposes increased 56.3 percent from 1997 to 2002, while State and local capital investment increased by 29.7 percent. Federal support for highways increased dramatically following the passage of the Federal-Aid Highway Act of 1956 and the establishment of the HTF. The Federal share of total funding peaked in 1965 at 30.1 percent. Since that time, the Federal percentage of total funding has gradually declined, but remained above 20.0 percent until 1998, when it dropped to 19.0 percent. Because TEA-21 was not enacted until late in Federal FY 1998, the increased funding under the legislation did not translate immediately into increased cash outlays

Exhibit 6-8 Funding for Highways by Level of Government, 1957–2002



Year	Funding for Total Highway Expenditures					Funding for Capital Outlay		
	Federal	State	Local	Total	Percent Federal	Federal	Total	Percent Federal
1957	\$1.1	\$6.1	\$2.0	\$9.3	12.2%	\$1.1	\$5.6	19.4%
1961	\$2.9	\$6.2	\$2.4	\$11.5	24.8%	\$2.8	\$6.8	41.1%
1965	\$4.3	\$7.3	\$2.7	\$14.3	30.1%	\$4.2	\$8.4	50.7%
1969	\$4.7	\$10.4	\$3.7	\$18.8	25.1%	\$4.6	\$10.4	44.2%
1973	\$5.8	\$13.8	\$4.6	\$24.2	24.1%	\$5.6	\$12.2	46.0%
1977	\$7.8	\$15.1	\$6.9	\$29.8	26.3%	\$7.5	\$13.1	57.6%
1981	\$11.9	\$20.1	\$10.4	\$42.4	28.1%	\$11.5	\$19.7	58.4%
1985	\$14.7	\$27.9	\$14.9	\$57.5	25.7%	\$14.3	\$26.6	53.8%
1989	\$14.5	\$36.4	\$19.9	\$70.9	20.5%	\$14.1	\$33.1	42.5%
1993	\$17.6	\$46.5	\$22.3	\$86.4	20.4%	\$16.9	\$39.5	42.7%
1995	\$19.9	\$48.8	\$24.7	\$93.5	21.3%	\$18.9	\$44.2	42.6%
1997	\$21.2	\$54.2	\$26.6	\$102.0	20.8%	\$20.1	\$48.4	41.6%
1998	\$20.5	\$59.7	\$27.8	\$108.0	19.0%	\$19.4	\$52.3	37.1%
1999	\$23.3	\$61.0	\$31.7	\$116.0	20.1%	\$22.1	\$57.2	38.7%
2000	\$27.5	\$62.7	\$32.6	\$122.7	22.4%	\$26.1	\$61.3	42.6%
2001	\$30.0	\$66.3	\$34.5	\$130.8	23.0%	\$28.5	\$66.7	42.8%
2002	\$32.8	\$69.0	\$34.1	\$135.9	24.1%	\$31.5	\$68.2	46.1%

Sources: Highway Statistics Summary to 1995, Table HF-210; Highway Statistics, various years, Tables HF-10A and HF-10.

Q. How does the pattern of Federal shares of capital outlay compare with what was predicted in prior reports?

A. The 1999 C&P report had predicted that the Federal share would fall below the 41 to 46 percent range observed from 1987 to 1997, but would subsequently return to that range. This prediction was based on projections of HTF cash flows, recognizing that the ramp up of Federal funding under TEA-21 would take some time to translate into increased cash outlays.

1987 through 1997, the Federal share remained in a range of 41 to 46 percent. The Federal percentage of capital outlay dropped below this range in 1998, falling to 37.1 percent, but has subsequently returned to it rising to 42.6 percent in 2000 (based on revised data, as discussion in the introduction to this Chapter) and 46.1 percent in 2002. Preliminary information suggests this percentage is likely to fall a bit in 2003.

Q. Do the relative Federal, State, and local shares of funding described in this chapter equate to a comparable relative degree of influence?

A. No. As discussed earlier, there are significant intergovernmental transfers of funds occurring from the Federal government to State and local governments, from State governments to local governments, and from local governments to State governments. Depending on the specific grant program involved, State and local recipients of transfer payments from other governments have a varying degree of autonomy and discretion in how they use the funds. The implication of this is that the relative degree of influence that each level of government has on what individual projects are funded and what types of highway expenditures are made is not necessarily consistent with the share of highway funding that each level of government provides.

during that year. Because the Federal-aid highway program is a multiple-year reimbursable program, the impact of increases in obligation levels phases in gradually over a number of years. The Federal percentage of total funding rose steadily from 1998 to 2002, as the increased obligation authority provided under TEA-21 began to translate into higher cash outlays.

The Federally funded portion of capital outlay by all levels of government rose above 40 percent in 1959, peaking at 58.3 percent in 1981. From

Spending by all levels of government on maintenance and traffic services increased by 23.9 percent from 1997 to 2002, but declined as a percentage of total highway spending, since other types of expenditures grew even faster. As shown in Exhibit 6-7, maintenance and traffic services' share of total highway spending dropped to 24.4 percent, its lowest level since 1972. Spending on other noncapital expenditures including highway law enforcement and safety, administration and research, and interest payments also grew more slowly than overall highway spending from 1997 to 2002, falling from 21.8 percent of total spending to 20.4 percent.

Expenditures for highway law enforcement and safety were the slowest-growing category of highway spending from 1997 to 2002, at just 19.6 percent. Expenditures for administration and research and for debt service grew slightly slower than overall highway spending over the same period. Debt retirement expenditures were the fastest-growing category of expenses between 1997 and 2002.

Constant Dollar Expenditures

Highway expenditures grew more quickly than inflation between 1997 and 2002. As noted earlier, total highway expenditures increased 33.3 percent from \$102.0 billion to \$135.9 billion between 1997 and 2002, which equates to an average annual growth rate of 5.9 percent. Over the same period, it is estimated that highway construction costs increased at an annual rate of 2.5 percent, and other costs rose at an annual rate of 2.3 percent. In constant dollar terms, total highway expenditures grew by 18.4 percent between 1997 and 2002.

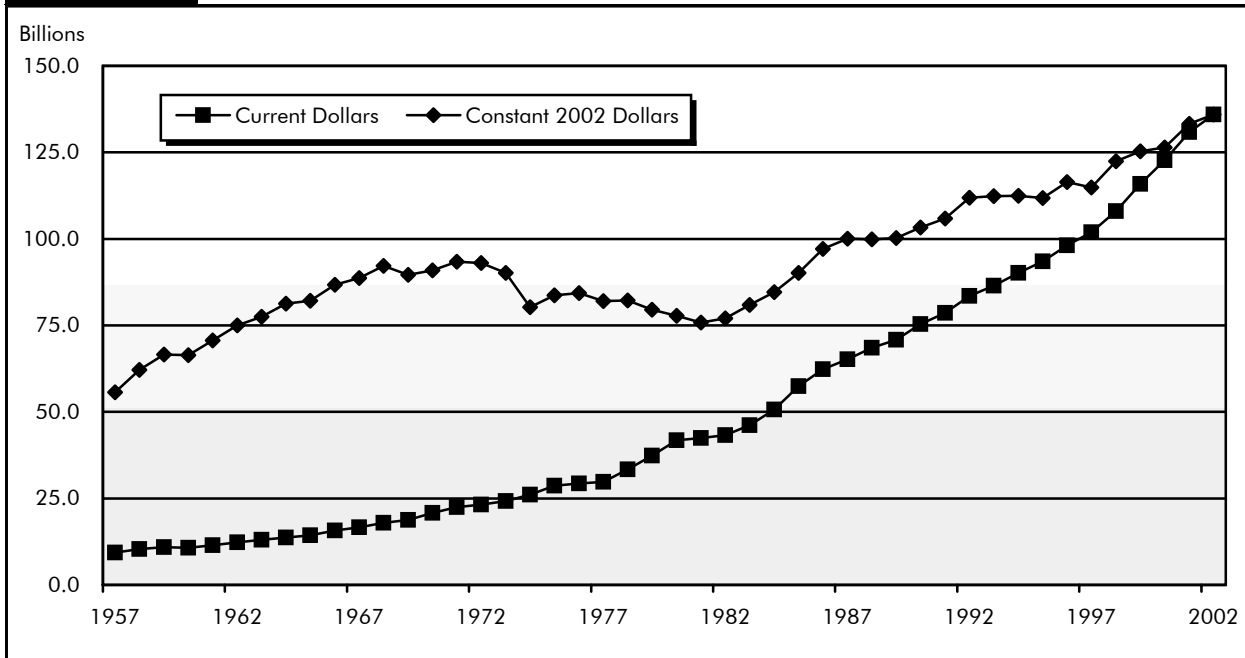
Q. What indices are used to convert current dollars to constant dollars in this report?

A. For capital outlay expenditures, the FHWA Construction Bid Price Index is used. For all other types of highway expenditures, the CPI is used.

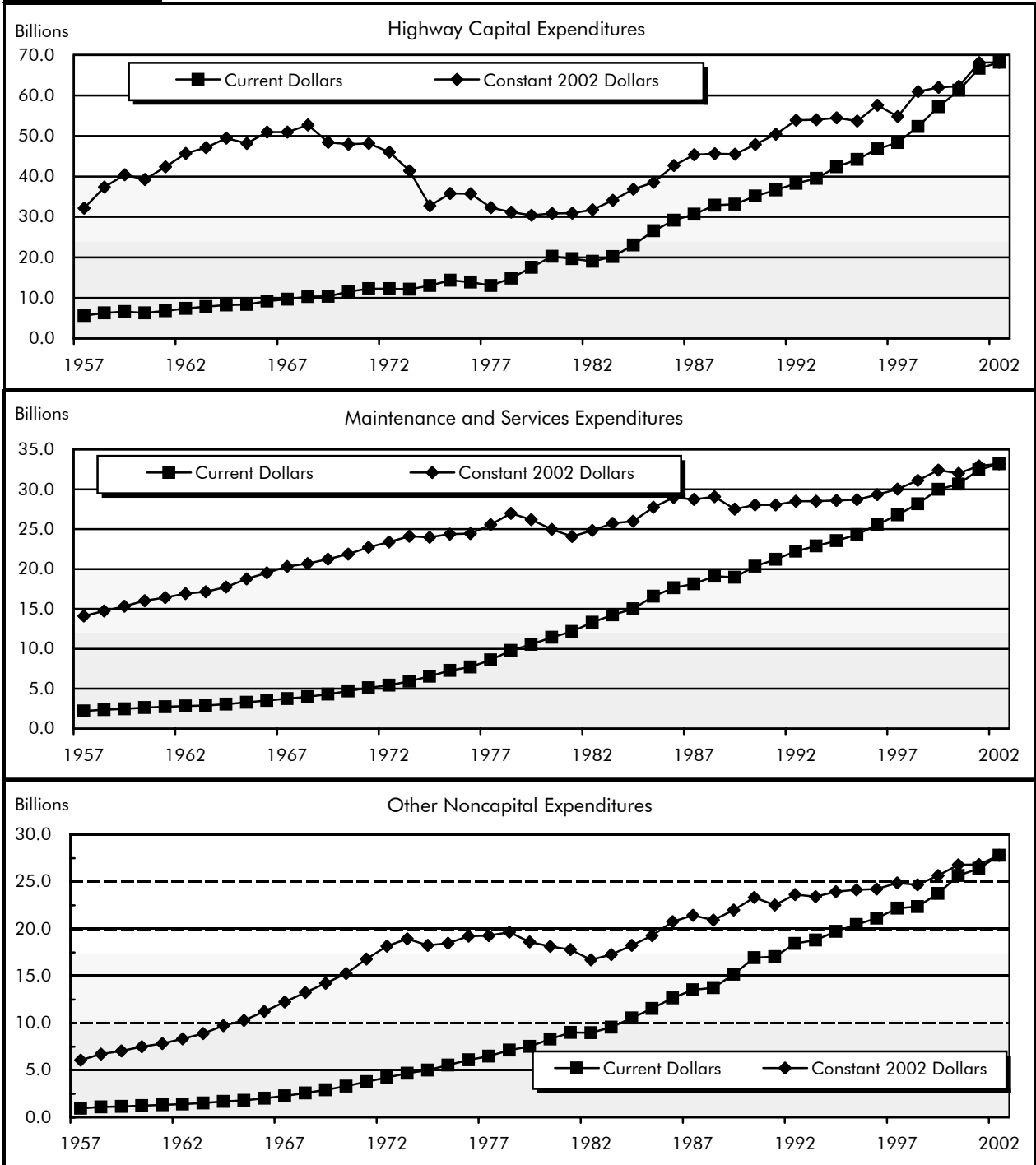
Exhibit 6-9 shows that highway expenditures have grown in current dollar terms in each of the years from 1957 through 2002. In constant dollar terms, total highway expenditures by all levels of government reached a plateau in 1971. From 1972 to 1981, highway spending did not keep pace with inflation. Since 1981, constant dollar highway spending has increased; and by 1986, it had moved back above the 1971 level. Constant dollar spending reached an all-time high in 2002.

Exhibit 6-9

Total Highway Expenditures in Current and Constant 2002 Dollars, All Units of Government, 1957–2002



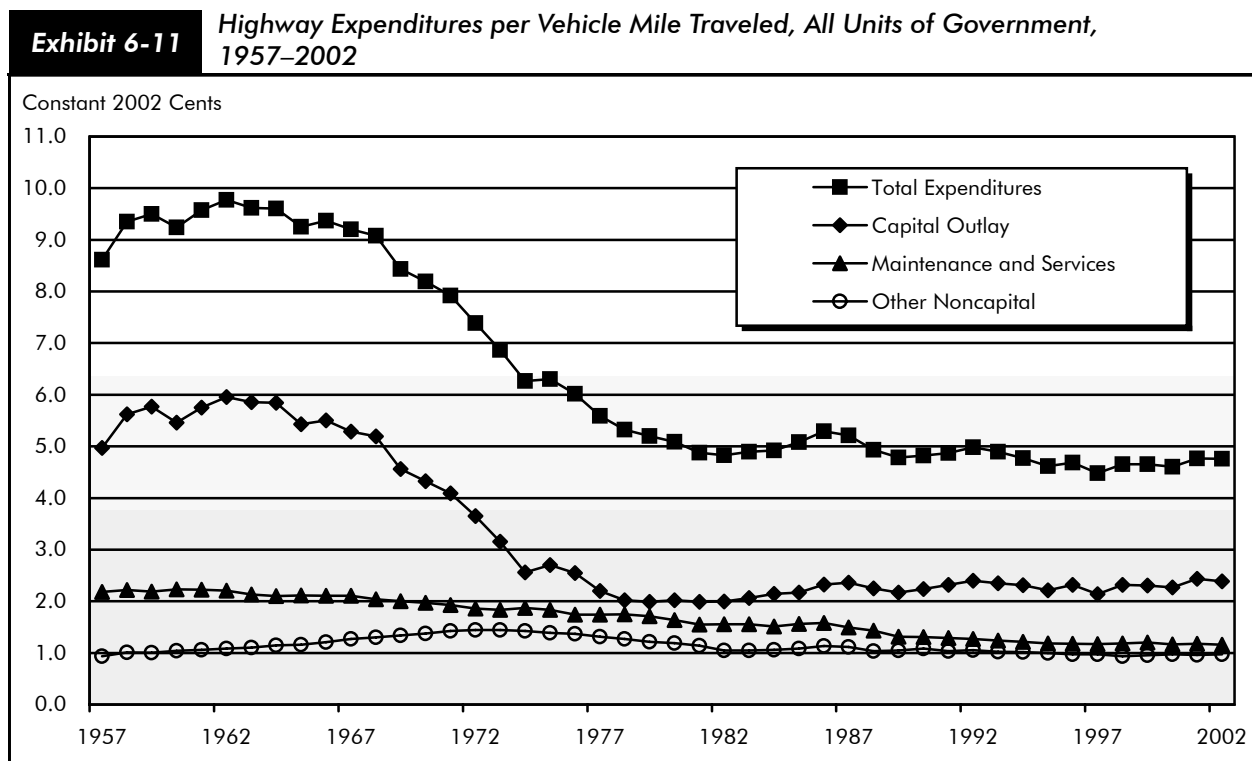
Much of the increase in constant dollar spending since 1981 has been driven by highway capital outlay expenditures, which have grown more quickly than maintenance and other noncapital expenditures in both current and constant dollar terms. Over this 21-year period, highway capital outlay grew at an average annual rate of 6.1 percent from \$19.0 billion to \$68.2 billion. In constant dollar terms, this equates to a 120.4 percent increase. Over this same period, maintenance and traffic services grew by 37.8 percent in constant dollar terms, and other noncapital expenditures grew by 56.3 percent in constant dollars. Highway construction costs grew more slowly than the CPI during this period, so the purchasing power of funds used for capital outlay expenditures has not eroded as quickly. Highway construction costs grew at an average annual rate of 2.2 percent since 1981, compared with an average annual increase in the CPI of 3.3 percent. *Exhibit 6-10* compares current dollar and constant dollar spending for capital outlay, maintenance and traffic services, and other noncapital expenditures (including highway law enforcement and safety, administration and research, and interest payments).

Exhibit 6-10**Highway Capital, Maintenance, and Other Noncapital Expenditures in Current and Constant 2002 Dollars, All Units of Government, 1957–2002****Constant Dollar Expenditures per VMT**

While not all types of highway expenditures would necessarily be expected to grow in proportion to vehicle miles traveled (VMT), increases in VMT do increase the wear and tear on existing roads, leading to higher capital and maintenance costs. The addition of new lanes and roads to accommodate additional traffic results in one-time capital costs, as well as recurring costs for preservation and maintenance. Traffic supervision and safety costs are also related in part to traffic volume. As the highway system has grown and become more complex, the cost of administering the system has grown as well.

In current dollar terms, total expenditures per VMT have grown steadily over time. Between 1997 and 2000, expenditures per VMT rose from 4.0 cents to 4.8 cents. Expenditures per VMT in constant dollars also rose slightly in this period, increasing 6.2 percent. During the 1960s and 1970s, total expenditures per VMT declined steadily in constant dollar terms, but the rate of decline slowed during the 1980s and 1990s.

Capital outlay per VMT increased 11.7 percent between 1997 and 2002 in constant dollar terms. The 2001 and 2002 levels of approximately 2.4 cents per VMT were two of the three highest since 1976. As shown in *Exhibit 6-11*, over time, spending on maintenance and traffic services and other noncapital items has not kept pace with capital spending on a constant dollar per VMT basis. However, both have been very stable since 1995, at approximately 1.18 and 0.97 cents per VMT, respectively.



Highway Capital Outlay Expenditures

State governments directly spent \$51.8 billion on highway capital outlay in 2002. As discussed earlier in the chapter, and as shown in Exhibit 6-6, this figure includes the \$29.6 billion received in grants from the Federal government for highways. *Exhibit 6-12* shows how States applied this \$51.8 billion to different functional systems and also includes an estimate of how the total \$68.2 billion spent by all levels of government was applied. State government capital outlay is concentrated on the higher-order functional systems; local governments apply the larger part of their capital expenditures to lower-order systems.

Total highway capital expenditures by all levels of government amounted to \$8,190 per lane-mile in 2000, or 2.4 cents per VMT. Capital outlay per lane-mile was highest for the higher-order functional systems and was higher on urban roads than rural roads. Capital outlay per VMT ranged from 3.4 cents on rural other

Exhibit 6-12 Highway Capital Outlay by Functional System, 2002

Functional Class	Direct State Capital Outlay (\$Billions)	Capital Outlay, All Jurisdictions		
		Total (\$Billions)	Per Lane Mile (Dollars)	Per VMT (Cents)
Rural Arterials and Collectors				
Interstate	\$6.6	\$6.6	\$49,070	2.4
Other Principal Arterial	8.6	8.7	34,013	3.4
Minor Arterial	4.1	4.6	15,852	2.6
Major Collector	2.7	3.9	4,540	1.8
Minor Collector	0.4	1.2	2,263	2.0
Subtotal	\$22.5	\$25.0	\$11,997	2.5
Urban Arterials and Collectors				
Interstate	10.5	10.5	140,004	2.6
Other Freeway and Expressway	4.8	5.0	114,550	2.6
Other Principal Arterial	7.6	9.3	49,648	2.3
Minor Arterial	3.1	5.5	23,668	1.6
Collector	0.8	2.6	13,620	1.8
Subtotal	\$26.8	\$32.9	\$45,105	2.2
Subtotal, Rural and Urban	\$49.3	\$57.9	\$20,566	2.3
Rural and Urban Local	\$2.4	\$10.3	\$1,863	2.7
Total, All Systems	\$51.8	\$68.2	\$8,190	2.4
Funded by Federal Government	\$29.6	\$31.5	\$3,779	1.1

Source: Highway Statistics 2002 and unpublished FHWA data.

principal arterials to 1.6 cents on urban minor arterials. On a cents-per-VMT basis, capital outlay for rural roads is about 15 percent higher than for urban roads.

Capital Outlay by Improvement Type

States provide the FHWA with detailed data on what they spend on arterials and collectors, classifying expenditures on each functional system into 17 improvement types. For this report, these improvement types have been allocated among three groups: System Preservation, System Expansion, and System Enhancement.

Exhibit 6-13 shows the distribution of the \$49.3 billion in State expenditures among these three categories. Detailed data on Federal Government and local expenditures are unavailable, so the combined \$57.9 billion of capital outlay on arterials and collectors by all levels of government was classified based on the State expenditure patterns. Similarly, little information is available on the types of improvements being made by all levels of government on local functional system roads. To develop an estimate for the improvement type breakdown for the \$68.2 billion invested on all systems in 2002, it was assumed that expenditure patterns were roughly equivalent to those observed for arterials and collectors.

In 2002, about \$35.8 billion was spent on system preservation (52.6 percent of total capital outlay). As defined in this report, system preservation activities include capital improvements on existing roads and bridges that are designed to preserve the existing pavement and bridge infrastructure, but does not include routine maintenance.

Exhibit 6-13 Highway Capital Outlay by Improvement Type, 2002 (Billions of Dollars)

Direct State Expenditures on Arterials and Collectors	System Preservation	System Expansion		System Enhancement	Total
		New Roads and Bridges	Existing Roads		
Right-of Way		\$1.7	\$1.7		\$3.4
Engineering	\$3.7	1.2	1.2	\$0.6	6.7
New Construction		6.1			6.1
Relocation			1.0		1.0
Reconstruction—Added Capacity	1.6		3.6		5.2
Reconstruction—No Added Capacity	3.2				3.2
Major Widening			2.4		2.4
Minor Widening	0.4				0.4
Restoration and Rehabilitation	8.1				8.1
Resurfacing	0.5				0.5
New Bridge		0.8			0.8
Bridge Replacement	3.7				3.7
Major Bridge Rehabilitation	2.2				2.2
Minor Bridge Work	2.1				2.1
Safety				1.3	1.3
Traffic Management/Engineering				0.8	0.8
Environmental and Other				1.4	1.4
Total, State Arterials and Collectors	\$25.5	\$9.8	\$9.9	\$4.1	\$49.3
Total, Arterials and Collectors, All Jurisdictions (estimated)*					
Highways and Other	20.9	10.0	11.5	5.0	47.4
Bridge	9.6	1.0			10.5
Total, Arterials and Collectors	\$30.4	\$11.0	\$11.5	\$5.0	\$57.9
Total Capital Outlay on All Systems (estimated)*					
Highways and Other	24.5	11.8	13.6	5.9	55.8
Bridges	11.3	1.1			12.4
Total, All Systems	\$35.8	\$12.9	\$13.6	\$5.9	\$68.2
Percent of Total	52.6%	18.9%	19.9%	8.6%	100.0%

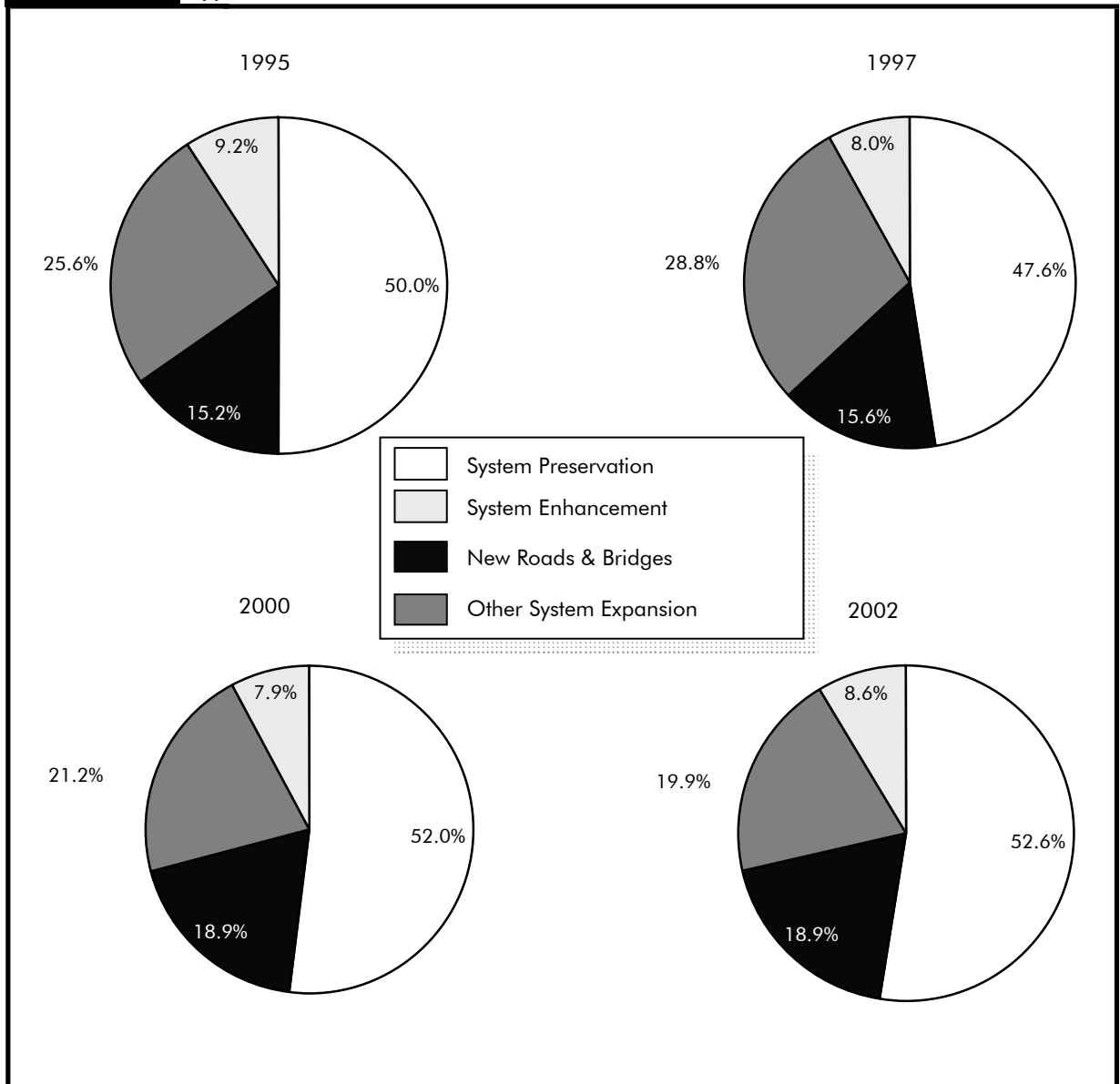
*Improvement type distribution was estimated based on State arterial and collector data.

Sources: Highway Statistics 2002, Table SF-12A and unpublished FHWA data.

About \$12.9 billion (18.9 percent of total capital outlay) was spent on the construction of new roads and bridges in 2002. An additional \$13.6 billion (19.9 percent) is estimated to have been used to add lanes to existing roads. Another \$5.9 billion (8.6 percent) was spent on system enhancement, including safety enhancements, traffic operations improvements, and environmental enhancements.

Exhibit 6-14 depicts the change, over time, in the share of capital outlay devoted to these major categories. After declining between 1995 and 1997, the overall share of highway capital improvements going toward system preservation increased significantly from 1997 to 2000, reaching 52.0 percent. From 2000 to 2002, the preservation share continued to increase slightly, to 52.6 percent. The share devoted to system enhancements increased between 2000 and 2002, but is slightly lower than the 1995 level.

Exhibit 6-14 Highway Capital Outlay by Improvement Type, 1995, 1997, 2000, and 2002



Q. How are "system preservation," "system expansion," and "system enhancement" defined in this report?

A. System preservation consists of capital improvements on existing roads and bridges, intended to preserve the existing pavement and bridge infrastructure. This includes reconstruction, resurfacing, pavement restoration or rehabilitation, widening of narrow lanes or shoulders, bridge replacement, and bridge rehabilitation. Also included is the portion of widening projects estimated to be related to reconstructing or improving the existing lanes. System preservation does not include routine maintenance costs.

Note that system preservation as defined in this report does not include routine maintenance. As shown in Exhibit 6-6, an additional \$25.7 billion was spent by all levels of government in 2002 on routine maintenance.

System expansion includes the construction of new roads and new bridges, as well as those costs associated with adding lanes to existing roads. This includes all "New Construction," "New Bridge," "Major Widening," and most of the costs associated with "Reconstruction-Added Capacity," except for the portion of these expenditures estimated to be related to improving the existing lanes of a facility. As used in this report, "System Expansion" is the functional equivalent to "Capacity Expansion" used in some previous editions of the C&P report. The term was modified because some system preservation and system enhancement improvements may result in added capacity without the addition of new lanes.

System Enhancement includes safety enhancements, traffic operations improvements such as the installation of intelligent transportation systems, and environmental enhancements.

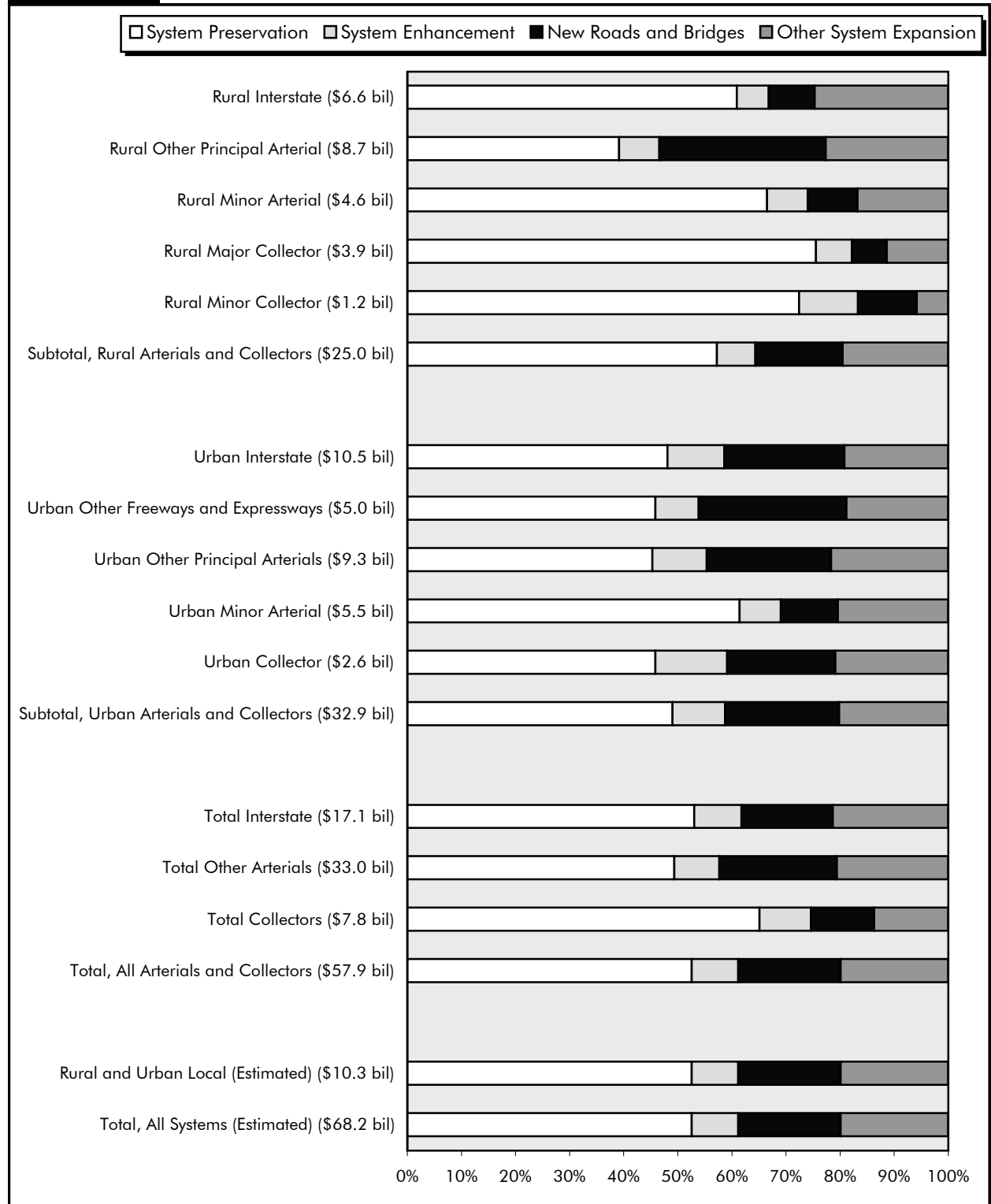
Expenditures for new roads and bridges relative to other improvement expenditures were steady between 2000 and 2002, at 18.9 percent. Other system expansion decreased significantly, however (19.9 percent in 2002 versus 21.2 percent in 2000, and down from 28.8 percent in 1997). As a result, overall outlays for system expansion continued to decrease proportionally, compared with preservation and enhancements.

Exhibit 6-15 shows significant variations in the types of capital expenditures made by States on different functional systems. The portion of capital outlay devoted to system preservation ranges from 39.1 percent on rural other principal arterials to 75.5 percent on rural major collectors. Overall, system preservation's share on arterials and collectors in rural areas (57.2 percent) was greater than in urban areas (49.0 percent), but the difference was much smaller than in 2000.

System expansion expenditures also vary significantly by functional class. The portion of capital used for construction of new roads and bridges is highest on rural other principal arterials, at 30.8 percent, while rural interstates have the largest share going to other system expansion improvements (24.7 percent). Rural other principal arterials have over 53 percent of capital investment devoted to system expansion. Total system expansion shares are lower on collectors (25.3 percent) than on interstates (38.2 percent) and other arterials (42.3 percent).

Q. Are there other definitions of the term "system preservation" in common use?

A. Yes. One alternative definition currently in use within the asset management community is "a strategy of improvements on existing roads and bridges, intended to extend service life of the existing pavement and bridge infrastructure without increasing its structural capacity." That definition would include some items classified as maintenance expenditures in this report, but would not include heavy rehabilitation or reconstruction.

Exhibit 6-15**Distribution of Capital Outlay by Improvement Type and Functional System, 2002**

Transit Finance

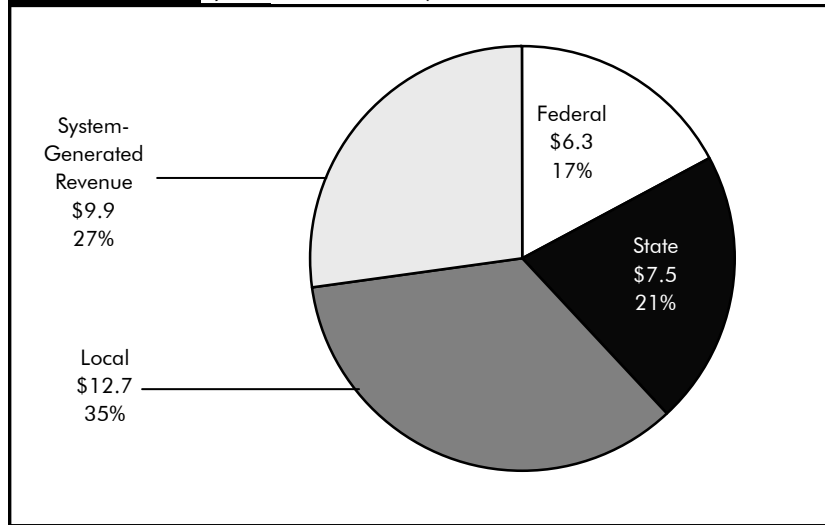
Transit Funding

In 2002, \$36.5 billion was available from all sources to finance transit investment and operations. Transit funding comes from two major sources: *public funds* allocated by Federal, State, and local governments; and *system-generated revenues* earned for the provision of transit services. Federal funding for transit includes fuel taxes dedicated to transit from the Mass Transit Account (MTA) of the Highway Trust Fund (HTF), as well as undedicated taxes allocated from Federal general fund appropriations. State and local governments also provide funding for transit from their general fund appropriations, as well as from fuel, income, sales, property, and other unspecified taxes, specific percentages of which may be dedicated to transit [Exhibit 6-16]. These percentages vary considerably among taxing jurisdictions and by type of tax. Other public funds from sources such as toll revenues and general transportation funds may also be used to fund transit. System-generated revenues are composed principally of passenger fares, although additional revenues are also earned by transit systems from advertising and concessions, park-and-ride lots, investment income, and rental of excess property and equipment. Exhibit 6-17 breaks down the sources of total transit funding. The most notable change in transit funding between 2000 and 2002 was a 73 percent increase in public funding from local sources from \$2.7 billion to \$4.7 billion.

Exhibit 6-16		Revenue Sources for Transit Financing, 2002 (Millions of Dollars)				
	Federal	State	Local	Total	Percent	
Public Funds	\$6,296	\$7,546	\$12,748	\$26,590	72.9%	
General Fund	1,259	2,118	2,641	6,017	16.5%	
Fuel Tax	5,037	620	105	5,762	15.8%	
Income Tax		247	105	352	1.0%	
Sales Tax		2,005	4,183	6,188	17.0%	
Property Tax		22	502	524	1.4%	
Other Dedicated Taxes		881	493	1,374	3.8%	
Other Public Funds		1,653	4,720	6,372	17.5%	
System-Generated Revenue				9,890	27.1%	
Passenger Fares				8,130	22.3%	
Other Revenue				1,760	4.8%	
Total All Sources				\$36,480	100.0%	

Source: National Transit Database.

Exhibit 6-17 2002 Public Transportation Revenue Sources
(Billions of Dollars)



Source: National Transit Database.

Q. What type of dedicated funding does mass transit receive from Federal highway-user fees?

A. Prior to FY 1983, all funding for transit was from general revenue sources. In 1983, the Mass Transit Account (MTA) was established within Highway Trust Fund (HTF), funded by 1.0 cent of the Federal motor-fuel tax. In 1990, the portion of the Federal fuel tax dedicated to MTA was increased to 1.5 cents, in 1995 to 2.0 cents, in 1997 to 2.85 cents, and in 1998 to 2.86 cents (retroactive to October 1, 1997) with the passage of TEA-21. Since 1997, 2.86 cents of Federal highway-user fees on gasohol, diesel and kerosene fuel, and other special fuels, including benzol, benzene, and naphtha, have also been dedicated to the MTA. (Since 1997, the total Federal fuel tax for a gallon of gasoline has been 18.4 cents and the total tax for a gallon of diesel has been 24.4 cents.)

Since 1997, the MTA has also received 2.13 cents of the user fee on liquefied petroleum gas and 1.86 cents of the user fee on liquefied natural gas. (The total Federal fuel tax for a gallon of LPG has been 11.9 cents and the total tax for a gallon of LNG has been 48.54 cents.) The MTA does not receive any of the nonfuel revenues (such as heavy vehicle use taxes) that accrue to the HTF.

Level and Composition of Public Funding

In 2002, public funds of \$26.6 billion were available for transit and accounted for 73 percent of total transit funding. Of this amount, Federal funding was \$6.3 billion, accounting for 24 percent of total public funding and for 17 percent of all available funding from both public and nonpublic sources. [Note that the \$6.3 billion Federal funding amount is for transit capital and operating expenses only, and is lower than total Federal funding allocated to FTA.] State funding was \$7.5 billion, accounting for 28 percent of total public funds and 21 percent of funding from all sources. Local jurisdictions provided the bulk of transit funds, \$12.7 billion in 2002, or 48 percent of total public funds and 35 percent of all funding. System-generated revenues were \$9.9 billion, 27 percent of all funding.

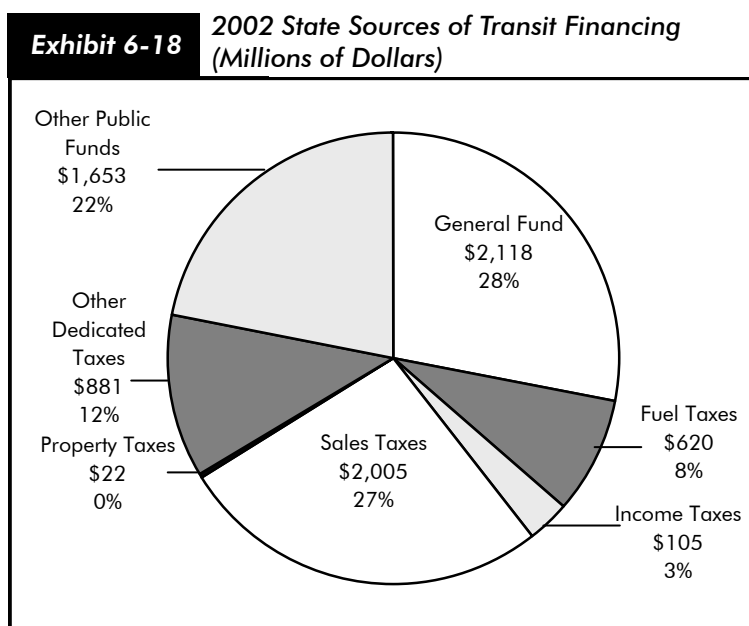
Federal Funding

Federal funding for transit comes from two sources, the general revenues of the U.S. government and revenues credited to MTA of HTF generated from

fuel taxes. The MTA, a transit trust fund for capital projects in transit, is the largest source of Federal funding for transit and accounts for approximately 80 percent of total Federal funds for transit. Allocations from the Federal general fund contribute the remaining 20 percent. Total funding from MTA in nominal dollars increased from \$0.5 billion in 1983 to \$5.0 billion in 2002.

State and Local Funding

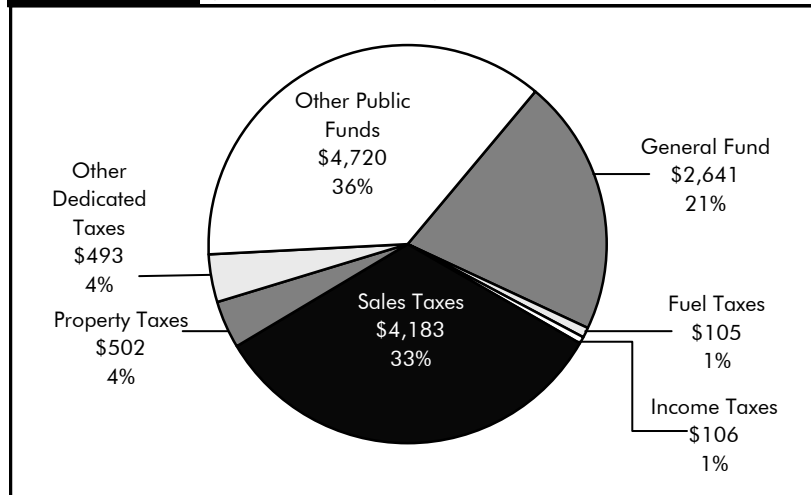
General funds and other dedicated public funds are important sources of funding for transit at both the State and local levels [Exhibits 6-18 and 6-19]. In 2002, 28 percent of State funds and 21 percent of local funds came from general revenues. Allocations from other public funds accounted for 22 percent of total State and 36 percent of total local funding for transit. Dedicated sales taxes are a major source of funding for transit at both the State and local level. In 2002, they accounted for 27 percent of total State and 33 percent of total local funding for transit. Dedicated income and property taxes provide more modest levels of funding at both the State and local levels. Dedicated income taxes are a more important source of transit funds at the State level, whereas dedicated property taxes are more important at the local level.



Source: National Transit Database.

Level and Composition of System-Generated Funds

In 2002, system-generated funds were \$9.9 billion and provided 27.1 percent of total transit funding. Passenger fares contributed \$8.1 billion, accounting for 82 percent of system-generated funds and 22 percent of total transit funds. These passenger fare figures do not include payments by State entities to transit systems to offset reduced transit fares for certain segments of the population, such as students and the elderly. These payments are included in other revenues.

Exhibit 6-19**2002 Local Sources of Funding for Transit
(Millions of Dollars)**

Source: National Transit Database.

Trends in Public Funding

Prior to 1962, there was no Federal funding for transit. State and local funding was limited, equal to about 13 percent of total public funding for transit in 2002 in real terms. Public funding for transit grew rapidly in the 1970s. Federal funding increased at an average annual rate of 38.9 percent, and State and local funding increased at an average annual rate of 11.9 percent throughout the decade. Federal funding grew much more slowly during the 1980s, increasing at an average annual rate of 0.4 percent, while funding at the State and local levels continued to grow steadily at an average annual rate of 7.8 percent. During the 1990s, Federal funding for transit grew more rapidly than in the 1980s, increasing at an average annual rate of 4.3 percent. However, State and local government funding grew more slowly than in the preceding decade, increasing at an average annual rate of 4.8 percent. Since 2000, the increase in public funding for transit has picked up at the Federal, State, and local levels. Between 2000 and 2002, Federal funding increased at an average annual rate of 9.4 percent, and State and local funding at an average annual rate of 13.6 percent [Exhibit 6-20].

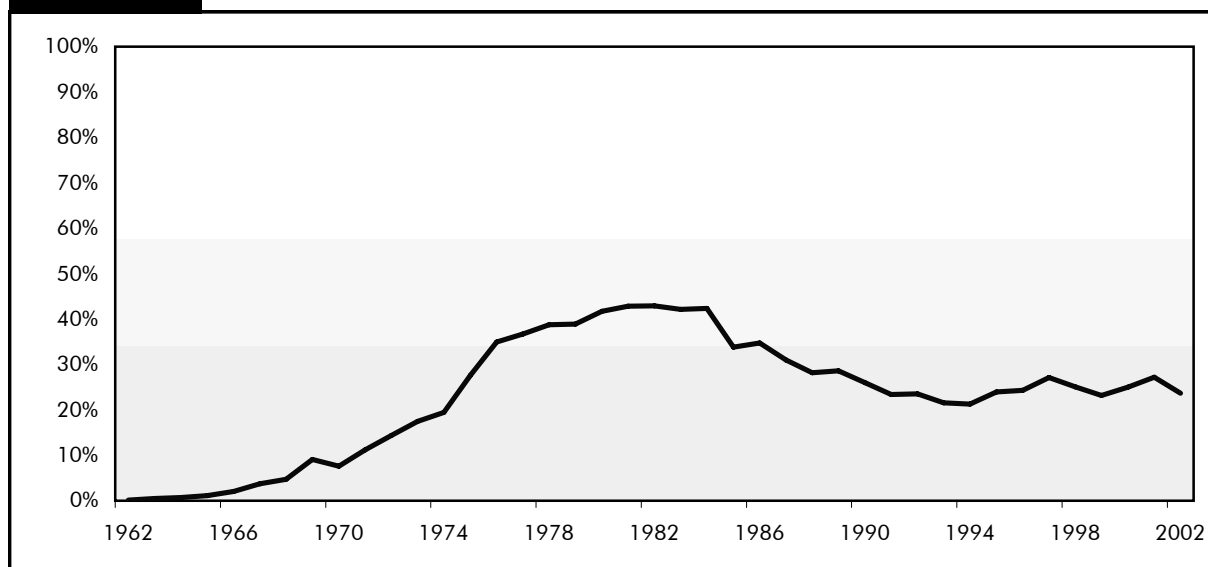
Exhibit 6-20**Growth in Public Funding for Public Transportation by Government Jurisdiction**

1960–2002 Year	Average Annual Growth Rate		
	Federal	State and Local	Total
1960–70	na	8.2%	9.0%
1970–80	38.9%	11.9%	17.2%
1980–90	0.4%	7.8%	5.3%
1990–00	4.3%	4.8%	4.7%
2000–02	9.4%	13.6%	12.5%

Source: National Transit Database.

Federal funding for transit, as a percentage of total public funding for transit from Federal, State, and local sources combined, reached a peak of 43.0 percent in the early 1980s [Exhibit 6-21]. However, by 1990, the Federal government provided only 26 percent of the total public funding available for transit. This lower percentage was the result of the growth in State and local funding for transit vastly exceeding the growth of Federal funding during the 1980s. Since 1990, the Federal government has provided between 21 and 27 percent of total public funding for transit; in 2002, it provided 24 percent of these funds.

Exhibit 6-21 Federal Share of Public Funding for Transit, 1962–2002



Source: National Transit Database.

Funding in Current and Constant Dollars

Total public funding for transit in current dollars reached its highest level of \$26.6 billion in 2002, a 27 percent increase over 2000. Federal funding in current dollars increased by 20 percent from \$5.3 billion in 2000 to \$6.3 billion in 2002; and State and local funding in current dollars increased by 28 percent from \$15.7 billion in 2000 to \$20.3 billion in 2002. Total funding for transit in constant dollars increased by 22 percent between 2000 and 2002; funding in constant dollars from Federal sources increased by 15 percent, and from State and local sources by 22 percent [Exhibits 6-22 and 6-23].

Flexible Funding

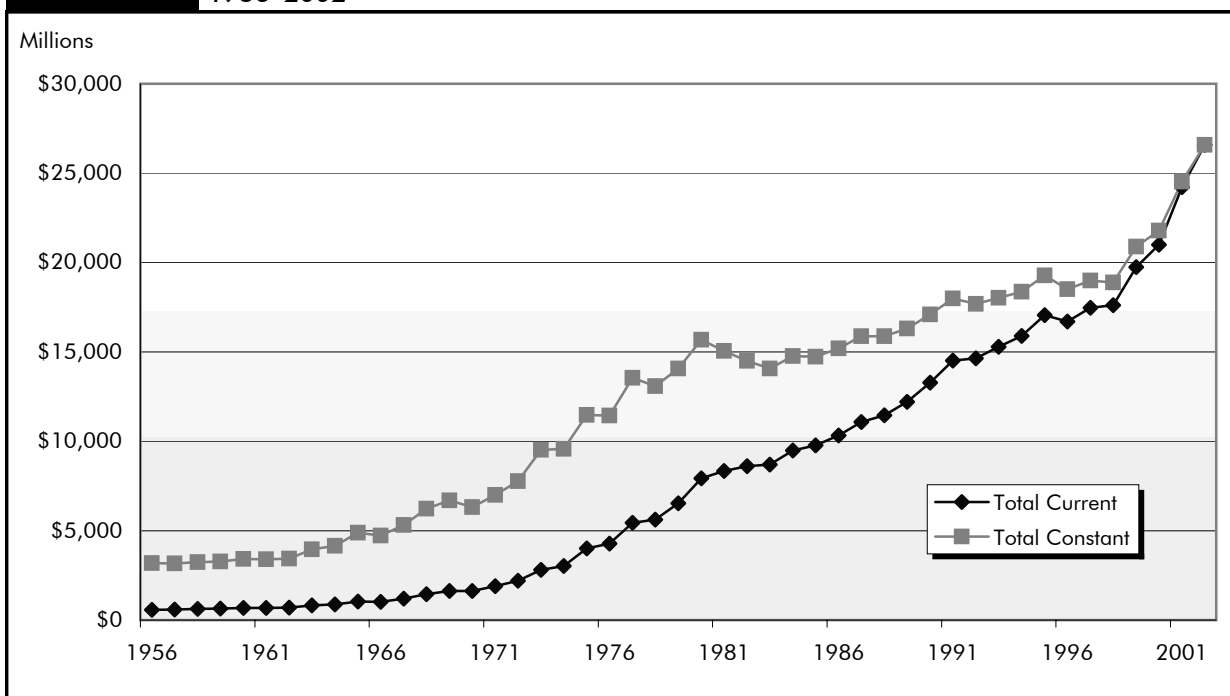
Since 1973, Federal surface transportation authorization statutes have contained flexible funding provisions that enable transfers from certain highway funds to transit programs and vice versa. In 1973, Congress began to allow local areas to exchange interstate transfer highway trust funds for transit funding from general revenues. Federal-aid highway dollars could be converted to transit grant purposes, with a higher local share. Flexible funding was implemented under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and continued by TEA-21. Transfers are subject to State, regional/local discretion, and priorities are established through Statewide transportation planning processes. All States and territories within the United States participate in the flexible funding program, except Kansas, North Dakota, South Dakota, and Wyoming. The amount of flexible funding transferred from highways to transit fluctuates from year to year. In 2002, \$1.1 billion was “flexed” from highways to transit, down from \$1.6 billion in 2000. Since the program’s beginning in FY 1991, through FY 2002, a total of \$8.8 billion has been transferred from highways to transit.

Exhibit 6-22
**Public Funding for Transit by Government Jurisdiction,
Selected Years, 1960–2002**

Year	State and Local			State and Local			Federal Share Current Dollars
	Federal Millions of Current Dollars	Local Millions of Current Dollars	Total Millions of Current Dollars	Federal Millions of Constant 2000 Dollars ¹	Local Millions of Constant 2000 Dollars ¹	Total Millions of Constant 2000 Dollars ¹	
1960	\$0	\$683	\$683	\$0	\$3,422	\$3,422	0.0%
1970	124	1,499	1,623	482	5,830	6,312	7.6%
1980	3,307	4,617	7,924	6,544	9,137	15,681	41.7%
1990	3,458	9,823	13,281	4,453	12,648	17,101	26.0%
1991	3,395	11,116	14,511	4,208	13,777	17,985	23.4%
1992	3,448	11,195	14,643	4,164	13,521	17,685	23.5%
1993	3,297	11,991	15,287	3,889	14,144	18,033	21.6%
1994	3,380	12,522	15,902	3,902	14,459	18,361	21.3%
1995	4,082	12,971	17,053	4,613	14,659	19,272	23.9%
1996	4,060	12,643	16,703	4,498	14,008	18,506	24.3%
1997	4,742	12,728	17,470	5,154	13,833	18,986	27.1%
1998	4,421	13,200	17,620	4,738	14,146	18,883	25.1%
1999	4,586	15,166	19,752	4,850	16,039	20,889	23.2%
2000	5,259	15,739	20,999	5,456	16,330	21,788	25.0%
2001	6,586	17,631	24,216	6,670	17,856	24,526	27.2%
2002	6,296	20,294	26,590	6,296	20,294	26,590	23.7%

¹ Deflated with GDP Chained Price Index reported in The Budget of the US Government 2004.

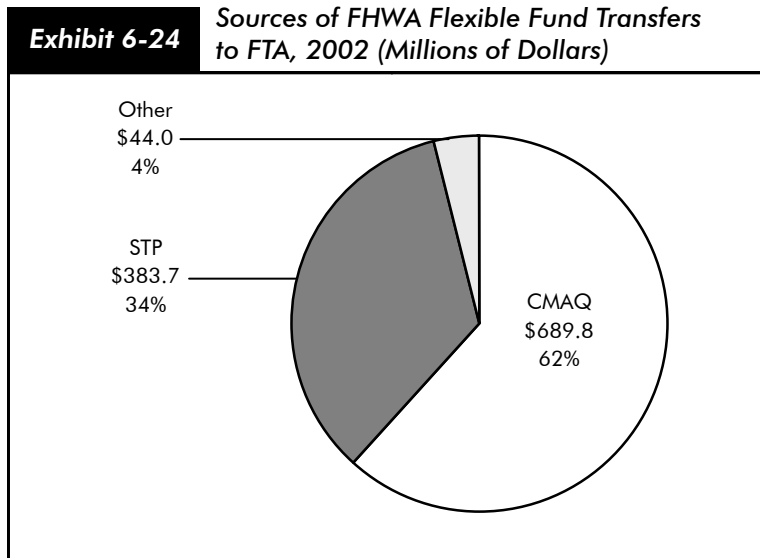
Source: National Transit Database/Office of Management and Budget.

Exhibit 6-23
**Current and 2002 Constant Dollar Public Funding for Public Transportation,
1956–2002**


Source: National Transit Database.

Flexible funds may be transferred from FHWA to FTA under the following programs:

- **Surface Transportation Program (STP).** Flexible funds allocated from STP, the largest flexible fund program, may be used for all transit projects eligible for funding under current FTA programs with the exclusion of operating assistance for Section 5307 and 5311 programs (Title 49, United States Code [USC]). STP funds flexed from highways to transit were 46 percent lower in 2002 than in 2000, falling from \$708.4.0 million to \$383.7 million (*Exhibit 6-24*).
- **Congestion Mitigation and Air Quality Improvement Program (CMAQ):** Flexible funds from CMAQ funds may be used to support transit projects to reduce vehicle emissions in areas that are not meeting air quality standards. The amount of CMAQ funds flexed to transit declined from \$864.0 million in 2000 to \$689.8 million in 2002, a drop of 20 percent.
- **FHWA Other:** Flexible funds may be allocated to FTA projects earmarked under ISTEA and TEA-21 as innovative demonstration, congestion relief, and intermodal projects. Funds flexed for these purposes increased by 65 percent, from \$26.7 million in 2000 to \$44.0 million in 2002. These funds account for a very small proportion of the total flexed, 4 percent in 2002.



Source: Federal Transit Administration, Office of Resource Management and State Programs.

These funds are transferred to the following FTA programs:

- **Urbanized Area Formula Program (Section 5307).** Funds are allocated to urban areas for planning costs and for capital investment in transit. Urbanized areas with populations of less than 200,000 may also use these funds for operating assistance.
- **Nonurbanized Area Formula Program (Section 5311).** Funds are allocated to support services to residents outside urban areas based on the size of States' nonurban populations. Program funds may be used for capital, operating, and administrative assistance.
- **Elderly and Persons with Disabilities Program (Section 5310).** Funds are allocated for the provision of specialized transit services for the elderly and disabled.

Q. What programs are included in the FTA Formula Grants Program?

A. The **FTA Formula Grants Program** is composed of the **Urbanized Area Formula Program (Section 5307)**, the **Nonurbanized Area Formula Program (Section 5311)**, and the **Elderly and Persons with Disabilities Formula Program (Section 5310)**. It is the largest assistance program administered by FTA and totaled \$3.6 billion in FY 2002. Allocations are made according to population. The Urbanized Area Formula Program receives 91.23 percent of the funding available under the FTA Formula Grants Program; the Nonurbanized Area Formula Program, 6.37 percent; and the Elderly and Persons with Disabilities Program, 2.40 percent. More than 90 percent of the funds allocated under the Urbanized Area Formula Program go to urbanized areas with populations of 200,000 or more. Nonurbanized areas are defined as rural areas and urban areas with populations under 50,000.

Urbanized area (Section 5307) funding can be used for capital improvements, including preventive maintenance and planning activities as long as non-Federal funding covers 20 percent or more of these expenses. Up to 10 percent of each agency's Section 5307 funding can be used to pay for Americans with Disabilities Act of 1990 (ADA) paratransit costs, provided again with the stipulation that a non-Federal match of at least 20 percent is made. Section 5307 funding is allocated on the basis of population, population density, and performance factors, including passenger miles traveled.

No flexible funds may be transferred directly to the Section 5309 Program; however, flexible funds that have been transferred to the 5307 Program may be used with Section 5309 funds to finance capital investment projects.

The flexible program also allows funds from the FTA Urbanized Area Formula Program to be transferred to FHWA. In 2002, a total of \$1.7 million was transferred. During the 11 years of the flexible fund program from FY 1992 to FY 2002, \$39.6 million has been transferred to FHWA. This amount is less than one-half of one percent of total flexible funding.

Capital Funding and Expenditures

Funding for capital investments by transit operators in the United States comes principally from public sources. Capital investments include the design and construction of new transit systems and extensions of existing systems ("New Starts"), and the modernization of existing fixed assets. Fixed assets include fixed guideway systems (e.g., rail tracks), terminals, and stations, as well as maintenance and administrative facilities. Capital investment expenditures also include the acquisition, renovation, and repair of rolling stock (i.e., buses, railcars, and locomotives and service vehicles).

Capital investment funds for transit are also generated through the issuance of bonds. *Certificates*

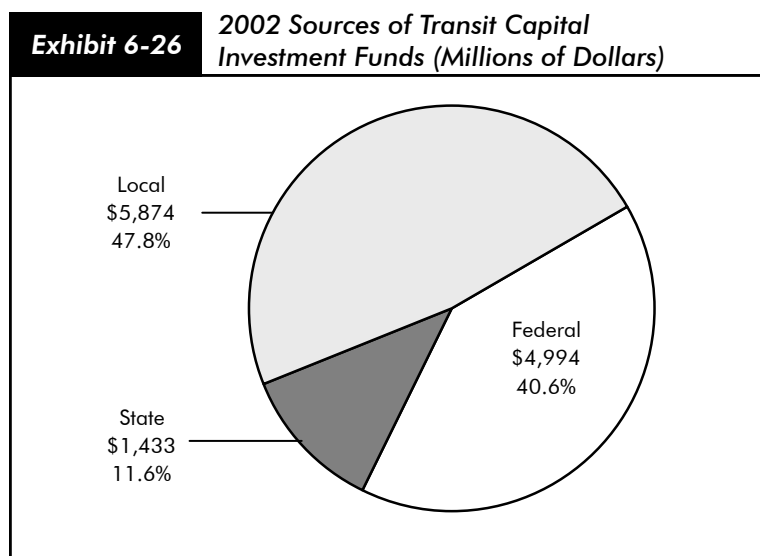
of participation (COPs) are tax-exempt bonds issued by State entities that are generally secured by revenues that are expected to be earned from the equipment that the COP funds are used to purchase. The U.S. Department of Transportation (DOT) has also developed three innovative financing programs to facilitate funding for transportation projects, including transit projects. These programs, the Transportation Infrastructure and Finance Innovation Act of 1998 (TIFIA), State Infrastructure Bank (SIB) Pilot Program, and Grant Anticipation Revenue Vehicle (GARVEE) bonds, which are discussed at the end of this chapter, contribute to the financing of transit capital investment. Three TIFIA loans have been awarded to finance transit projects in San Juan, New York, and Washington, D.C. Letters of interest in TIFIA loans have also been received for transit projects in Illinois, California, Nevada, and the State of Washington. Under the SIB program, seven SIBs have awarded \$45 million to assist 12 transit projects valued in excess of \$135 million. The loans have supported a diverse spectrum of projects, including bus purchases, rail modernization, intermodal facilities, a historic landmark rehabilitation, and rural transportation improvements. Many of the loans have assisted communities with local project match requirements, which

has enabled local governments to accelerate the implementation of transit infrastructure and services that might otherwise have been postponed because of a lack of available match funding. GARVEE-type bonds, called Transit Grant Anticipation Notes (GANs), have been issued by transit agencies in New Jersey, California, Pennsylvania, and Arizona to fund transit projects ranging from the purchase of new technology buses to the construction of new and rehabilitation of light rail and rapid rail lines. In each case, the bond issue was used to borrow against future Federal-aid funding to accelerate the project and thus reduce its cost.

In 2002, total public transit agency expenditures for capital investment were \$12.3 billion in current dollars and accounted for 34.9 percent of total transit expenditures. Federal funds accounted for \$5.0 billion of total transit agency capital expenditures, State funds for \$1.4 billion, and local funds \$5.9 billion. The share of capital funding from State and local governments increased between 2000 and 2002 and the share from the Federal government fell. Federal funds accounted for 40.6 percent of all funding for capital investment in 2002, compared with 47.2 percent in 2000, and 41.6 percent in 1993. State sources accounted for 11.6 percent of all capital funding in 2002, compared with 10.7 percent in 2000, and 23.0 percent in 1993. Local funding for capital investment accounted for 47.8 percent of all funding for capital investment in 2002, compared with 42.0 percent in 2000, and 35.5 percent in 1993. The decrease in the share of Federal funds for capital investment and increase in shares of State and local funds reflect the fact that both State and local funding for transit increased by more than 20 percent between 2000 and 2002, compared with an 8.1 percent increase in Federal funding over the same period [*Exhibits 6-25 and 6-26*].

Exhibit 6-25 Sources of Funds for Transit Capital Expenditures, 1990–2002 (Millions of Dollars)								
	1993	1995	1997	1999	2000	2002	Average Annual Growth	
							2002/1993	2002/2000
Federal	\$2,383	\$3,314	\$4,138	\$3,726	\$4,275	\$4,994	8.6%	8.1%
Share	41.6%	47.3%	54.2%	44.1%	47.2%	40.6%		
State	\$1,317	\$989	\$1,007	\$858	\$973	\$1,433	0.9%	21.3%
Share	23.0%	14.1%	13.2%	10.2%	10.7%	11.6%		
Local	\$2,033	\$2,706	\$2,492	\$3,860	\$3,808	\$5,874	12.5%	24.2%
Share	35.5%	38.6%	32.6%	45.7%	42.0%	47.8%		
Total	\$5,733	\$7,008	\$7,636	\$8,443	\$9,056	\$12,301	8.9%	16.5%

Source: National Transit Database.



As shown in *Exhibit 6-27*, rail modes take a higher percentage of total capital investment than bus modes because of the higher cost of building fixed guideways and rail stations. In 2002, \$8.7 billion, or 71 percent of total transit capital expenditures, was invested in rail modes of transportation, compared with \$3.6 billion, or 29 percent of the total, in nonrail modes.

Source: National Transit Database.

Exhibit 6-27 Transit Capital Expenditures by Mode and by Type, 2002
(Millions of Dollars)

	Guideway	Systems	Stations	Facilities	Rolling Stock	Other Vehicles	Other	Total	Percent of Total
Rail	2,973	132	1,178	1,497	2,243	39	613	8,676	71%
Commuter Rail	625	64	290	650	590	7	144	2,371	19%
Heavy Rail	1203	30	796	679	1424	28	406	4,564	37%
Light Rail	1136	37	90	167	227	4	63	1,723	14%
Other Rail ¹	9	0	2	1	3	0	1	17	0%
Nonrail	283	184	264	697	1823	36	338	3,625	29%
Bus	208	170	213	535	1543	33	325	3,028	25%
Demand Response	0	11	3	19	128	2	10	173	1%
Ferryboat	0	2	44	126	49	0	1	222	2%
Trolleybus	75	1	2	16	93	0	1	188	2%
Other Nonrail ²	0	1	2	0	10	0	1	14	0%
Total	3,257	316	1,442	2,194	4,066	75	952	12,301	100%
Percent of Total	26%	3%	12%	18%	33%	1%	8%	100%	

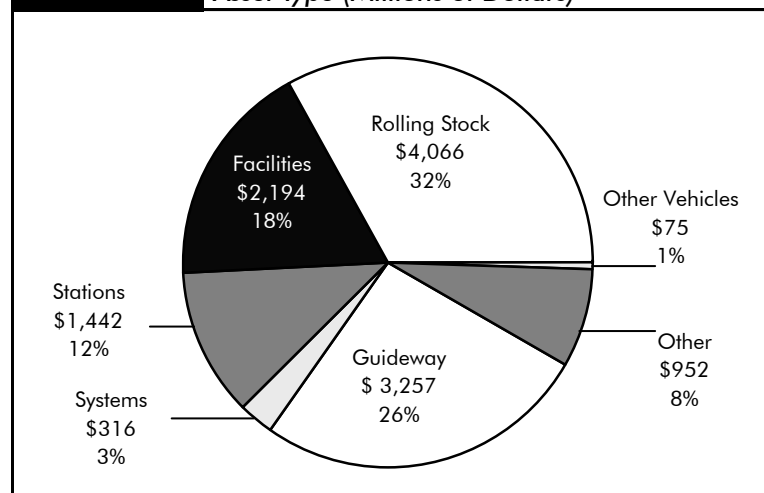
¹ Automated rail, Alaska rail, cable car, inclined plane, monorail

² Jitney, publico, and vanpool.

Source: National Transit Database.

Exhibit 6-28 shows the capital investment expenditures by asset type in 2002. Investment in *rolling stock* in 2002 was \$4.1 billion. Rolling stock includes the bodies and chassis of transit vehicles and their attached fixtures and appliances, but does not include fare collection equipment and revenue vehicle movement control equipment such as radios. *Guideway* investment in 2002 was \$3.3 billion. Guideway is composed of at-grade rail, elevated and subway structures, tunnels, bridges, track and power systems for all rail modes, and for paved highway lanes dedicated to buses. Investment in *facilities* in 2002 was \$2.2 billion. Facilities include the purchase, construction, and rehabilitation of maintenance facilities, including design and engineering, demolition, and land acquisition. It also includes investment in transit malls, transfer facilities, intermodal terminals, shelters, passenger stations, depots, terminals, high occupancy vehicle facilities, transit ways, and park-and-ride facilities. Additional investments in a range of equipment—crime

Exhibit 6-28 2002 Transit Capital Expenditures by Asset Type (Millions of Dollars)



Source: National Transit Database

prevention and security equipment, service and support equipment, operational support equipment (e.g., computer hardware and software), line equipment and structures, signals and communication equipment, and power equipment and substations—are also included. Investment in *stations* in 2002 was \$1.4 billion. Stations include platforms, shelters, and parking and crime prevention and security equipment at stations. Investment in *systems* in 2002 was \$316 million. A system is a group of devices or objects forming a network, especially for distributing something or serving a common purpose (e.g. telephone systems).

In 2002, \$952 million billion was for *other capital*. Other capital includes service vehicles, the construction of general administration facilities, furniture, equipment that is not an integral part of buildings and structures, data processing equipment (including computers and peripheral devices whose sole use is in data processing operations), fare collection equipment, and revenue vehicle movement control equipment. Other capital also includes shelters located at on-street bus stops.

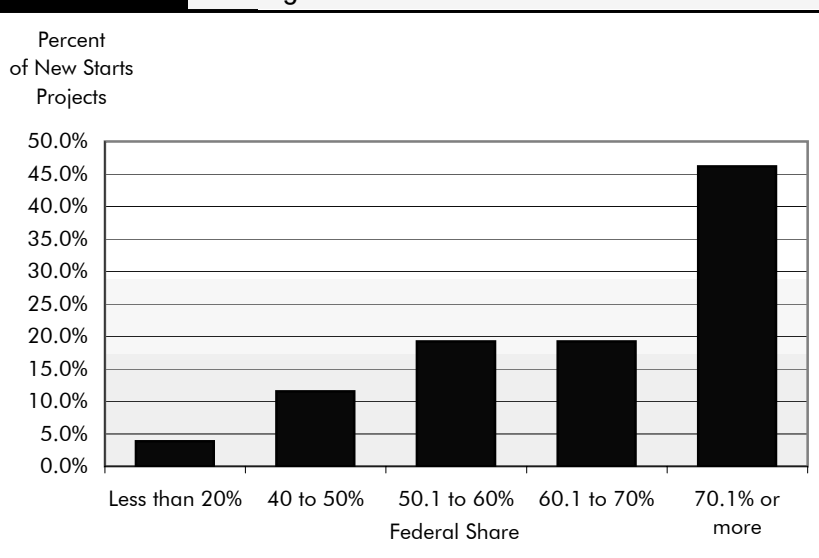
New Starts

Title 49 USC Section 5309 provides for the allocation of funds for the construction of new fixed guideway systems, fixed guideway modernization and expansion, and bus capital requirements. Projects involving the construction of new fixed guideway systems are known as “New Starts.”

To receive FTA capital investment funds for a New Starts project, the proposed project must emerge from the metropolitan and/or Statewide planning process. A rigorous series of planning and project development requirements must be completed in order to qualify for this funding. Local officials are required to analyze the benefits, costs, and other impacts with alternative transportation strategies before deciding upon a locally preferred alternative. FTA evaluates proposed projects on the basis of financial criteria and project justification criteria (including cost-effectiveness) as prescribed by statute. Initial planning efforts are not funded through the Section 5309 program, but may be funded through Section 5303 Metropolitan Planning or Section 5307 Urbanized Area Formula Grants programs.

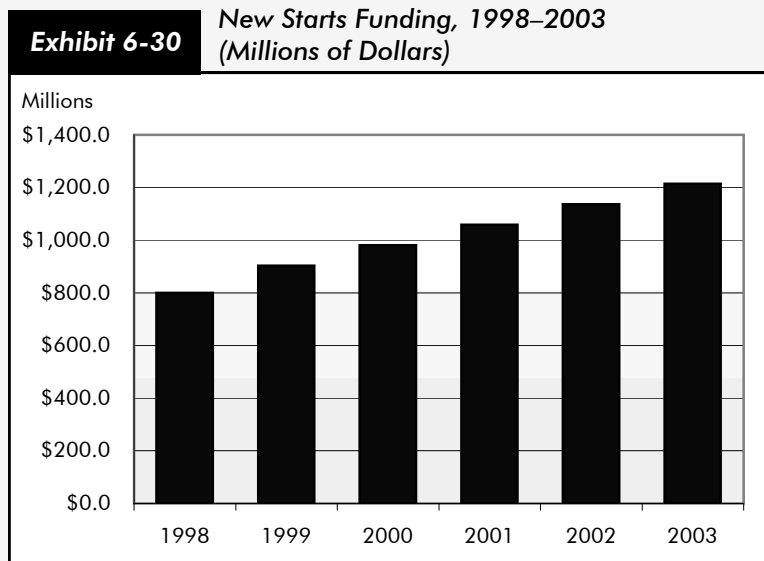
Under current law, Federal funding may compose up to 80.0 percent of a New Start funding requirement. Generally, however, the Federal share of such projects now averages about 50 percent of the total project cost [Exhibit 6-29] .

Exhibit 6-29 Federal Share of FY 2005 Existing Full Funding Grant Recommendations



Source: FTA, Annual Report on New Starts for FY 2005.

Total Federal funding for New Starts authorized by TEA-21 from 1998 through 2003 is \$6.1 billion. Annual funding for New Starts has increased from \$800.0 million in 1998 to \$1.2 billion in 2003 [Exhibit 6-30].

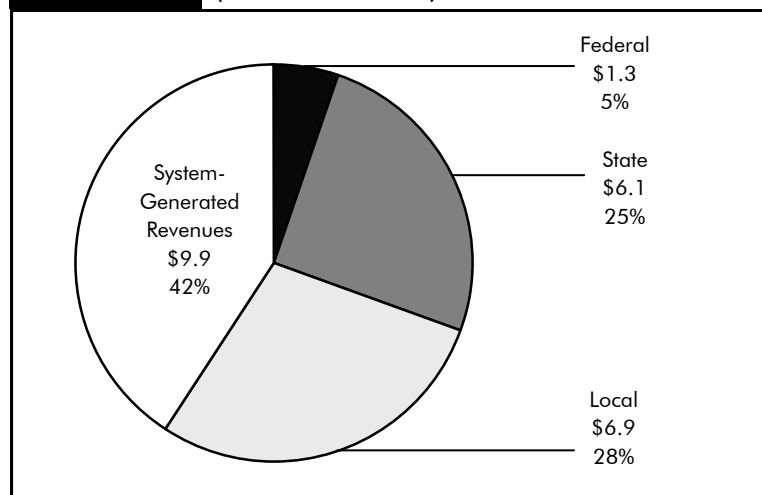


Source: FTA.

Operating Expenditures

Transit operating expenditures include wages, salaries, fuel, spare parts, preventive maintenance, support services, and leases used in providing transit service. In 2002, \$24.2 billion was available for operating expenses and accounted for 65.1 percent of total available funds. Of this amount, \$1.3 billion was

Exhibit 6-31 2002 Sources of Transit Operating Funds
(Billions of Dollars)



Source: National Transit Database.

provided by the Federal government, \$6.1 billion was provided by State governments, \$6.9 billion by local governments, and \$9.9 billion by system-generated revenues [Exhibits 6-31 and 6-32]. Since 1993, the percentage of funds attributable to each source has fluctuated within a small range. From 2000 to 2002, the percentage of funds available from State sources increased, while the percentage of funds available from local sources decreased.

Exhibit 6-32**Sources of Funds for Transit Operating Expenses¹
1993–2002 (Millions of Dollars)**

	1993	1995	1997	1999	2000	2001	2002	Average Annual Growth	
								2002/ 1993	2002/ 2000
Federal	\$911	\$768	\$604	\$860	\$984	\$1,117	\$1,302	4.0%	15.0%
Share	5.7%	4.6%	3.3%	3.9%	4.5%	4.8%	5.4%		
State	\$2,936	\$3,599	\$3,661	\$3,819	\$4,351	\$5,127	\$6,113	8.5%	18.5%
Share	18.4%	21.8%	20.0%	17.4%	20.1%	21.8%	25.3%		
Local	\$4,927	\$5,146	\$5,568	\$6,097	\$6,513	\$7,147	\$6,874	3.8%	2.7%
Share	30.8%	31.1%	30.4%	27.8%	30.0%	30.4%	28.4%		
System-generated	\$7,206	\$7,015	\$8,477	\$11,128	\$9,832	\$10,112	\$9,890	3.6%	0.3%
	45%	42%	46%	51%	45%	43%	41%		
Total	\$15,981	\$16,527	\$18,310	\$21,905	\$21,680	\$23,503	\$24,179	4.7%	5.6%

¹ These are sources of funds for operating expenses.

They differ slightly from the amounts disbursed for operating expenses provided in Exhibits-6-31 and 6-32.

Source: National Transit Database.

TEA-21 mandated that Federal funding to transit systems in urbanized areas with populations over 200,000 be used only for operating expenses for preventive maintenance. Formula grant funding to transit systems in urbanized areas with populations of less than 200,000 was still allowed to fund operating expenses.

As a result of the 2000 census, 56 areas were reclassified as urbanized areas with populations of more than 200,000. Transit agencies operating in these areas were slated to lose their eligibility to use Federal formula funding to finance transit operations starting in FY 2002. To help these agencies adjust their financing arrangements, the Transit Operating Flexibility Act (Pub.L. 107-232) was passed in September 2002, which amended Section 5307 of 49 USC to allow transit systems that were in urbanized areas that grew to more than 200,000 in the 2000 Census to continue using their formula funds for operating as well as capital expenses for one more year, despite their change in status.

Operating Expenditures by Transit Mode

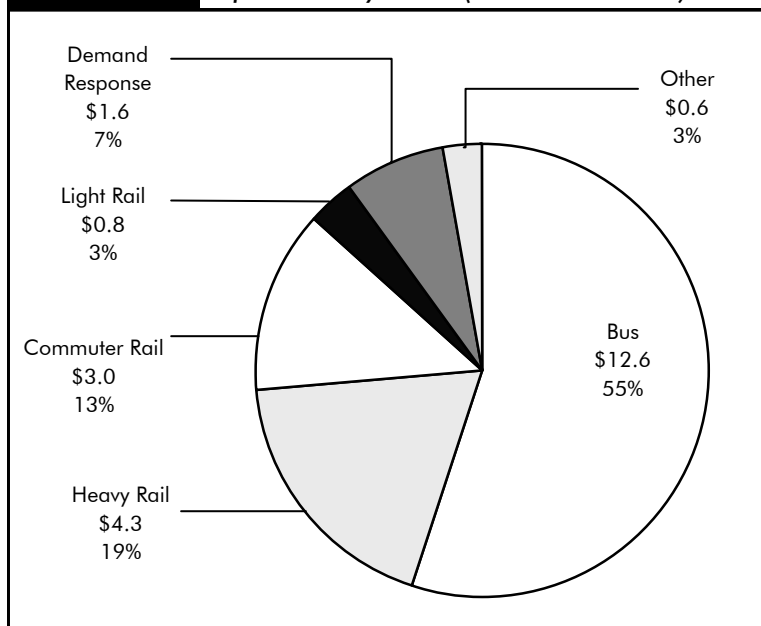
In 2002, transit operators' actual operating expenditures were \$22.9 billion [*Exhibit 6-33*]. These expenditures increased at an average annual rate of 7.0 percent between 2000 and 2002, more rapidly than during any other 2-year period since 1993. Operating expenditures for light rail and demand response systems increased more rapidly than operating expenditures for other modes, each at an average annual rate of about 15.0 percent. (As shown in Exhibit 6-37 and Exhibit 6-39, between 2000 and 2002 operating expenditures per revenue vehicle mile and operating expenditures per passenger mile for light rail and demand response systems increased more rapidly than for bus, heavy rail, or commuter rail.) Operating expenditures for heavy rail increased at an average annual rate of 4.2 percent between 2000 and 2002; operating expenditures for commuter rail increased at an average annual rate of 5.7 percent; operating expenditures for buses increased as an average annual rate of 7 percent; and operating expenditures for the remaining modes combined as "Other" increased at an average annual rate of 8.2 percent.

Exhibit 6-33**Disbursements for Transit Operations by Mode,
Directly Operated Services, 1988–2002 (Millions of Dollars)**

Year	Bus	Heavy Rail	Commuter Rail	Light Rail	Demand Response	Other	Total
1993	\$8,866	\$3,669	\$2,203	\$314	\$561	\$358	\$15,971
1994	9,168	3,786	2,353	412	712	401	16,832
1995	9,247	3,523	2,211	375	757	415	16,528
1996	9,324	3,402	2,294	440	849	440	16,748
1997	9,777	3,474	2,278	471	1,009	454	17,462
1998	10,120	3,530	2,360	493	1,134	498	18,135
1999	10,841	3,693	2,574	536	1,275	540	19,460
2000	11,026	3,931	2,679	592	1,225	549	20,003
2001	11,814	4,180	2,854	676	1,410	595	21,529
2002	12,586	4,267	2,995	778	1,636	643	22,905
Percent of Total							
1993	55.5%	23.0%	13.8%	2.0%	3.5%	2.2%	100.0%
2002	54.9%	18.6%	13.1%	3.4%	7.1%	2.8%	100.0%
Average Annual Growth Rate							
2002/2000	7%	4.2%	5.7%	14.6%	15.5%	8.2%	7.0%
2002/1993	4.0%	1.7%	3.5%	10.6%	12.6%	6.7%	4.1%

Source: National Transit Database.

Operating expenditures for demand response vehicles have more than tripled over the past decade, from \$561 million in 1993 to \$1.6 billion in 2002, reflecting increased services to the elderly and persons with disabilities pursuant to the ADA and new programs targeted toward the provision of services to these groups. Although these expenditures appeared to be stabilizing, with a marginal decline from 1999 to 2000, between 2000 and 2002 they increased by 33 percent.

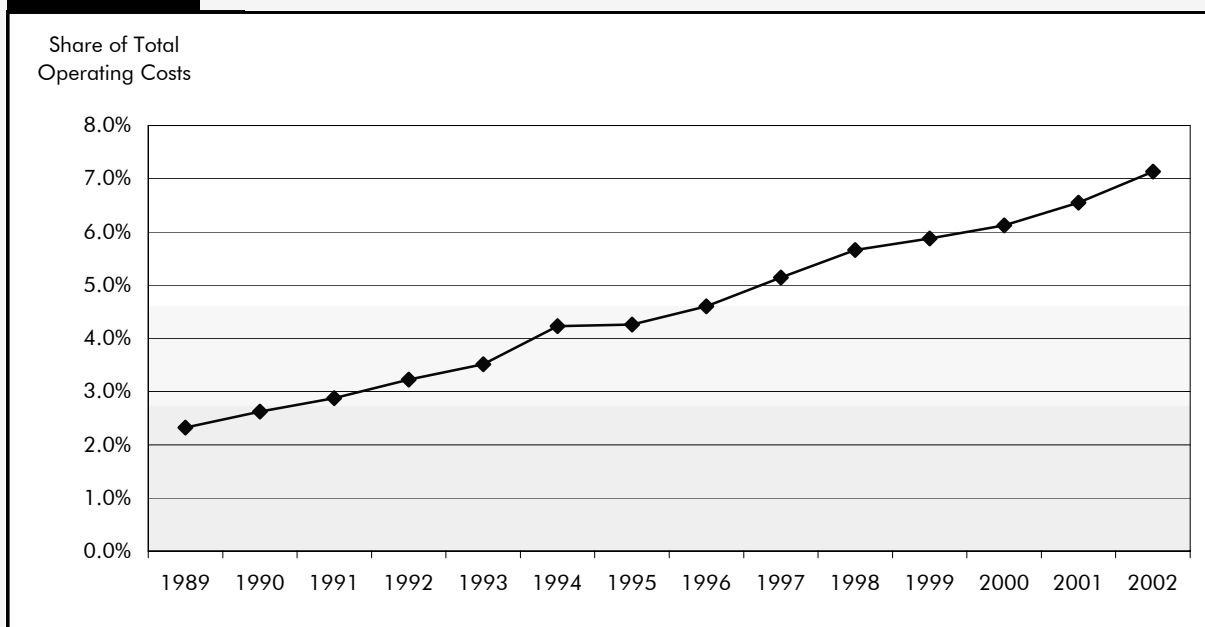
Exhibit 6-34**2002 Disbursements for Transit
Operations by Mode (Billions of Dollars)**

Source: National Transit Database.

Buses accounted for the largest percentage of transit operating expenditures, \$12.6 billion in 2002, or 55 percent of the operating expenditure total. Heavy rail accounted for \$4.3 billion, or 19 percent of the total; and commuter rail accounted for \$3.0 billion, or 13 percent of the total. In 2002, demand response systems accounted for 7.1 percent of total transit operating expenses, compared with 3.5 percent in 1993. Light rail and other transit vehicles accounted for 3 percent each [Exhibit 6-34].

The ADA directed transit agencies gradually to make all their services accessible. Until systems reached full accessibility, ADA directed transit agencies to offer parallel demand response services. Once transit accessibility was achieved, ADA stipulated that the right to parallel transit services would remain only for those unable to use accessible transit services. In the years since ADA, the need for demand responsive services has far exceeded the expectations of transit planners. As shown in Exhibit 6-35, the share of transit expenses going to demand responsive services tripled, from 2.3 percent before ADA (1989) to 7.1 percent in 2002.

Exhibit 6-35 Demand Response Services Share of Transit Total Operating Costs



Source: National Transit Database.

Operating Expenses by Type of Cost

In 2002, \$11.8 billion, or 51.5 percent of total transit operating expenses, were for vehicle operations [Exhibit 6-36]. Expenditures on vehicle maintenance were \$4.7 billion or 20.3 percent of the total; expenditures on nonvehicle maintenance were \$2.4 billion or 10.6 percent of the total; and expenditures on general administration were \$4.0 billion or 17.6 percent of the total. Expenditures increased for vehicle operations at an average annual rate of 7 percent between 2000 and 2002, for vehicle maintenance at an average annual rate of 6 percent, for nonvehicle maintenance at an average annual rate of 7 percent, and for general administration at an average annual rate of 9 percent.

Exhibit 6-36 Disbursements for Transit Operations—All Modes by Function, Directly Operated Services, 2002 (Millions of Dollars)

Mode	Vehicle Operations		Vehicle Maintenance		Nonvehicle Maintenance		General Administration		Total	
Bus	\$7,095	56.4%	\$2,687	56.4%	\$562	4.5%	\$2,241	17.8%	\$12,586	100.0%
Heavy Rail	1,754	41.1%	762	17.8%	1,095	25.7%	657	15.4%	4,267	100.0%
Commuter Rail	1,145	38.2%	721	24.1%	555	18.5%	573	19.1%	2,995	100.0%
Light Rail	330	42.4%	178	22.9%	130	16.7%	140	18.0%	778	100.0%
Demand Response	1,094	66.9%	199	12.2%	35	2.1%	308	18.8%	1,636	100.0%
Other	370	57.5%	106	16.5%	57	8.9%	110	17.1%	643	100.0%
Total	\$11,788	51.5%	\$4,654	20.3%	\$2,435	10.6%	\$4,029	17.6%	\$22,905	100.0%

Source: National Transit Database.

Bus and rail operations have inherently different cost structures. While 67 percent of total operations expenditures for demand response transit and 56 percent of total operations expenditures for buses were spent for actual operation of the vehicles, only about 40 percent of rail operations expenditures were spent on the operation of rail vehicles. A significantly higher percentage of expenditures for rail modes of transportation are classified as nonvehicle maintenance for the repair and maintenance of fixed guideway systems.

Financial Efficiency

Operating expense per vehicle revenue mile (VRM) is one measure of financial or cost efficiency. It calculates the expense of operating a transit vehicle in revenue service. In 2002, operating expense per VRM for all transit modes combined was \$6.68 [*Exhibit 6-37*]. Operating costs per VRM for all modes combined increased marginally between 1993 and 2002 (at an average annual rate of 0.9 percent), but more rapidly between 2000 and 2002 (at an average annual rate of 3.4 percent). Demand response systems have experienced the most rapid increases in operating costs per VRM, at an average annual rate of 3.4 percent between 1993 and 2002 and at an average annual rate of 7.2 percent between 2000 and 2002.

Exhibit 6-37 Operating Expenses per Vehicle Revenue Mile, 1993–2002							
Year	Bus	Heavy Rail	Commuter Rail	Light Rail	Demand Response	Other ¹	Total
1993	\$5.62	\$7.26	\$10.83	\$11.65	\$2.31	\$9.97	\$6.16
1994	5.78	7.34	11.23	12.38	2.61	6.46	6.17
1995	5.81	6.52	10.15	11.07	2.55	5.86	6.05
1996	5.91	6.44	10.36	12.01	2.76	5.53	6.09
1997	6.09	6.44	9.92	11.84	2.88	5.13	6.12
1998	6.12	6.43	9.91	11.65	2.92	5.00	6.11
1999	6.31	6.58	10.58	11.37	3.05	4.42	6.25
2000	6.25	6.80	10.81	11.51	2.71	5.05	6.25
2001	6.49	7.07	11.28	12.72	2.88	5.41	6.49
2002	6.75	7.07	11.56	12.98	3.11	5.59	6.68
Average (1993–2002)	\$6.11	\$6.79	\$10.66	\$11.92	\$2.78	\$5.84	\$6.24
Average Annual Rate of Change							
2002/2000	3.9%	2.0%	3.4%	6.2%	7.2%	5.2%	3.4%
2002/1993	2.1%	-0.3%	0.7%	1.2%	3.4%	-6.2%	0.9%

¹ Automated guideway, cable car, ferryboat, inclined plane, jitney, monorail, publico, trolleybus, and vanpool.

Source: National Transit Database.

Operating expense per capacity-equivalent VRM is a better measure of comparing cost efficiency among modes because it adjusts for passenger-carrying capacities [*Exhibit 6-38*]. Rail systems are more cost efficient in providing service than nonrail systems, once investment in rail infrastructure has been completed. Based on operating costs alone, heavy rail is the most efficient at providing transit service and demand response systems are the least efficient. [Note that annual changes in operating expense per capacity-equivalent VRM and unadjusted VRM are the same for modes that reported separately.]

Exhibit 6-38**Operating Expenses per Capacity-Equivalent Vehicle Revenue Mile, 1993–2002**

Year	Bus	Heavy Rail	Commuter Rail	Light Rail	Demand Response	Other ¹	Total
1993	\$5.62	\$3.08	\$4.65	\$4.62	\$12.83	\$7.25	\$4.69
1994	5.78	3.11	4.82	4.91	14.50	6.98	4.75
1995	5.81	2.76	4.36	4.39	14.15	7.22	4.69
1996	5.91	2.73	4.45	4.77	15.31	7.20	4.72
1997	6.09	2.73	4.26	4.70	16.01	7.28	4.80
1998	6.12	2.72	4.25	4.62	16.22	7.44	4.84
1999	6.31	2.79	4.54	4.51	16.93	7.16	5.02
2000	6.25	2.88	4.64	4.57	15.05	7.58	5.01
2001	6.49	3.00	4.84	5.05	15.97	8.47	5.25
2002	6.75	3.00	4.96	5.15	17.30	8.53	5.44
Average (1993–2002)	\$6.11	\$2.88	\$4.58	\$4.73	\$15.43	\$7.51	\$4.92
Average Annual Rate of Change							
2002/2000	3.9%	2.0%	3.4%	6.2%	7.2%	6.1%	4.1%
2002/1993	2.1%	-0.3%	0.7%	1.2%	3.4%	1.8%	1.7%

¹ Automated guideway, cable car, ferryboat, inclined plane, jitney, monorail, publico, trolleybus, and vanpool.

Source: National Transit Database.

Cost Effectiveness

Operating expenses per passenger mile is an indicator of the cost effectiveness of providing a transit service [Exhibit 6-39]. It shows the relationship between service inputs as expressed by operating expenses and service consumption as expressed by passenger miles traveled. Operating expenses per passenger mile for all transit modes combined increased at an average annual rate of 2.0 percent between 1993 and 2000 (from \$0.42 to \$0.50), at a rate close to the 1.9 percent average annual increase in the gross domestic product (GDP) deflator. This indicates that, on average, the cost effectiveness of transit services in relationship to the rest of the economy has remained relatively constant. Operating expenses per passenger mile for heavy rail declined at an average annual rate of 1.5 percent between 1993 and 2002 (from \$0.36 to \$0.31). Operating expenses per passenger mile for commuter rail were the same in 1993 and 2002, although they had been lower in the intervening years. The increase in operating expenses per passenger mile for buses, light rail, and demand response services was higher on an average annual basis between 1993 and 2002 than the GDP deflator. In the case of buses, operating expenses per passenger mile increased at an average annual rate of 2.6 percent (from \$0.51 in 1993 to \$0.64 in 2002), and in the case of light rail at 2.2 percent (from \$0.45 to \$0.54). Operating expenses per passenger mile is highest for demand response services. It increased at an average annual rate of 6.4 percent between 1993 and 2000.

Rural Transit

Since 1978, the Federal Government has contributed to the financing of transit in rural areas, i.e., areas with populations of less than 50,000. These rural areas are estimated to account for 36 percent of the U.S. population and 38 percent of the transit-dependent population.

Exhibit 6-39**Operating Expenses per Passenger Mile Traveled by Mode, 1993–2002**

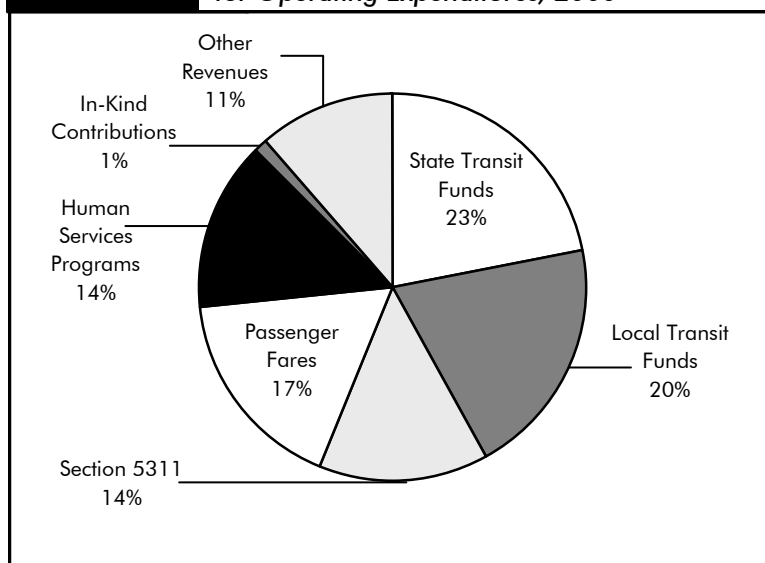
Year	Bus	Heavy Rail	Commuter Rail	Light Rail	Demand Response	Other ¹	Total
1993	\$0.51	\$0.36	\$0.32	\$0.45	\$1.44	\$0.57	\$0.42
1994	0.53	0.35	0.29	0.50	1.89	0.49	0.41
1995	0.54	0.32	0.27	0.44	1.91	0.47	0.41
1996	0.55	0.30	0.27	0.46	2.17	0.46	0.43
1997	0.56	0.29	0.28	0.46	1.90	0.44	0.43
1998	0.57	0.29	0.27	0.44	2.21	0.45	0.44
1999	0.58	0.29	0.29	0.45	2.28	0.46	0.45
2000	0.59	0.28	0.29	0.44	2.09	0.49	0.44
2001	0.60	0.29	0.30	0.47	2.25	0.52	0.46
2002	0.64	0.31	0.32	0.54	2.51	0.55	0.50
Average (1993–2002)	\$0.57	\$0.31	\$0.29	\$0.47	\$2.07	\$0.49	\$0.44
Average Annual Rate of Change							
2002/2000	4.9%	4.9%	5.2%	10.9%	9.8%	6.0%	6.0%
2002/1993	2.6%	-1.5%	-0.1%	2.2%	6.4%	-0.4%	2.0%

¹ Automated guideway, cable car, ferryboat, inclined plane, jitney, monorail, publico, trolleybus, and vanpool.

Source: National Transit Database.

Funding for rural transit is currently provided through 49 USC Section 5311, which, in 1994, replaced Section 18 of the Urban Mass Transit Act. Rural transit funding was increased substantially with passage of TEA-21. Federal funding for rural transit was \$224 million in FY 2002 and \$240 million in FY 2003, the end of the TEA-21 authorization period. States may transfer additional funds to rural transit from highway projects, transit projects, or formula transit funds for small, urbanized areas.

On average, 14 percent of rural transit authorities' operating budgets come from Section 5311 funds [Exhibit 6-40]. State and local governments cover, respectively, 23 and 20 percent of their rural transit operating budgets through a combination of dedicated State and local taxes, appropriations from State general revenues, and allocations from other city and county funds. In 2000, the last year for which information is available, total State and local contributions to rural transit operating budgets increased to a total of \$431 million, up from \$145 million in 1994. Human Services programs, including Medicaid, cover about 14 percent of rural operating budgets, and in-kind contributions and other revenues cover the remainder.

Exhibit 6-40**Rural Transit Operators' Budget Sources for Operating Expenditures, 2000**

Source: Status of Rural Public Transportation, 2000, Community Transportation Association of America, April 2001.

Innovative Finance

Q. What is innovative finance?

A. Though broadly defined as a combination of special funding initiatives, in the transportation industry the term “innovative finance” has become synonymous with techniques that are specifically designed to supplement the traditional methods used to finance highways. USDOT innovative finance initiatives are intended to augment rather than replace traditional financing techniques.

“Innovative finance” refers to a series of administrative and legislative initiatives, undertaken in recent years, which have removed barriers and added flexibility to Federal participation in transportation finance. Policy makers recognized they could accelerate surface transportation project development and expand the base of available resources by (1) removing barriers to private investment; (2) bringing the time value of money into Federal program decision making; (3) encouraging the use of new revenue streams, particularly to retire debt obligations; and (4) reducing financing and related costs, thus freeing

up savings for transportation system investment. These financing initiatives and techniques, which are commonly used in the private sector, are relatively new to Federal-aid transportation funding, and are thus frequently referred to collectively as “innovative finance.”

Over the past decade, innovative finance has undergone several transformations. Since its inception with the passage of ISTEA, innovative finance has laid foundations for several new concepts designed to fund transportation investment. TEA-21 continued the development of innovative financing concepts, including credit assistance, innovative debt financing, and public-private partnerships. The current status of these programs is described in more detail below.

Credit Assistance

Federal credit assistance for transportation projects takes various forms. Direct loans to project sponsors may provide the necessary capital to advance a project and/or reduce the amount of capital borrowed from other sources. Credit enhancement, including loan guarantees or lines of credit, makes Federal funds available on a contingency basis, thereby reducing the risk to investors and allowing project sponsors to borrow at lower interest rates. The projects themselves may often involve partnerships between the public and private sectors. Two of the most significant Federal credit assistance programs, introduced in recent years, are the Transportation Infrastructure and Finance Innovation Act (TIFIA) and the State Infrastructure Bank (SIB) programs.

Transportation Infrastructure and Finance Innovation Act (TIFIA)

The Transportation Infrastructure and Finance Innovation Act (passed as part of TEA-21) authorized the USDOT to establish a new credit program by offering eligible applicants the opportunity to compete for direct loans, loan guarantees, and lines of credit for up to one-third of the cost of large infrastructure construction projects of national significance, provided that the borrower has an associated revenue stream, such as tolls or local sales taxes, that can be used to repay the debt issued for the project. To qualify, a project

must have eligible costs that total at least \$100 million or exceed 50 percent of a State's Federal-aid highway apportionments for the most recent fiscal year, whichever is less. This dollar threshold reflects congressional intent to assist major projects that can attract substantial private capital with limited Federal investment. Intelligent Transportation System projects are subject to a lower threshold, a minimum of \$30 million. As of spring 2004, the TIFIA credit program has provided credit assistance of more than \$3.5 billion for 11 projects accounting for more than \$15 billion in infrastructure investment. These TIFIA projects include highway toll roads and bridges, transit systems, rail stations, ferry terminals, and intermodal facilities.

Q. What are some other innovative finance techniques being used as part of the Federal-aid Highway Program?

A. When trying to accelerate project construction, States often face challenges in aligning funding needs and availability. To address this, grant management tools commonly referred to as "cash flow tools" are being utilized to broaden a State's options for meeting matching requirements and to relax the timing restrictions placed on obligating funds.

Advance construction (AC) allows States to seek approval and begin Federal-aid projects using their own funds before any Federal funds have been obligated. An advance construction project may be "converted" to Federal assistance, either in stages or in its entirety, once there is sufficient Federal-aid funding and obligation authority for the project. Through December 2004, projects totaling over \$1.2 billion had entered into advance construction agreements.

Other cash flow management tools available to States include flexible match, tapered match, or the use of toll credits to meet the local financing share requirements for Federal-aid projects.

State Infrastructure Banks (SIBs)

Section 350 of the National Highway System Designation Act of 1995 (P.L. 104-59) authorized DOT to establish the State Infrastructure Bank Pilot Program. This program provides increased financial flexibility for infrastructure projects by offering direct loans and other credit enhancement products such as loan guarantees. SIBs are capitalized with Federal and State funds. Some States augment these operating reserves through a variety of methods, including special appropriations and debt issues. Each SIB operates as a revolving fund and can finance a wide variety of surface transportation projects. As loans are repaid, additional funds become available to new loan applicants. TEA-21 legislation limited the use of TEA-21 funds for SIB capitalization purposes to five States, of which only two are operating under the TEA-21 provisions; the remaining 31 States that participate in the SIB program operate under National Highway System rules and may not capitalize SIBs with TEA-21 funds. However, existing SIB programs continue to offer loan products. As of March 2004, 32 states have entered into 373 loan agreements with a total value of just under \$4.8 billion.

SIB loans are being used to fund both highway and transit projects. Seven SIBs have made loans of almost \$45 million to assist 12 transit projects valued in excess of \$135 million. The loans have supported a diverse spectrum of projects, including bus purchases, rail modernization, the development of intermodal facilities, a historic landmark rehabilitation, and rural transportation improvements. Many of the loans have assisted communities with local project match requirements. This has enabled local governments to accelerate the implementation of transportation infrastructure and services that might otherwise have been postponed because of a lack of available match funding.

Debt Financing

Because of their complexity, cost, and lengthy design and construction periods, transportation projects are often financed by issuing bonds. Repayment of the bonds over several years has traditionally been covered by sources such as State and local taxes or revenue generated from highway user fees. More recently, highway

and transit project sponsors have begun issuing debt instruments called Grant Anticipation Notes (GANs), backed by anticipated grant moneys. Grant Anticipation Revenue Vehicles (GARVEEs) are a particular form of GAN being used for transportation projects.

Grant Anticipation Revenue Vehicle (GARVEE)

GARVEE bonds permit an expanded variety of debt issuance expenses to be reimbursed with anticipated Federal funds. In addition to traditional debt service (principal and interest), expenses such as underwriting fees, bond insurance, and financial counsel are also eligible for reimbursement. Previously, eligible reimbursement expenses were limited to principal repayment and were restricted to certain categories of construction projects. Debt instruments issued by special purpose nonprofit corporations (classified as 63-20 corporations by the Internal Revenue Service) may be repaid with Federal-aid funds if the bonds are issued on behalf of the State and the proceeds are used for projects eligible under Title 23. As of June 2004, the amount of GARVEE debt issued nationally had reached just over \$5 billion.

Public-Private Partnerships

States are increasingly looking to the private sector as another potential source of highway and transit funding, either in addition to or in concert with new credit and financing tools. There is a long history of private sector involvement in providing highway transportation dating back to the late 1700s and early 1800s when numerous private toll roads were built to open interior areas of the country for commerce and settlement. In more recent times, private residential and commercial real estate developers have contributed directly to the growth of the transportation network by constructing local property access roads and upgrading adjacent collector or arterial routes, or by paying impact fees to local governments for use in improving the regional transportation system.

While private sector involvement in highway financing and construction slowed somewhat with the advent of dedicated public funding for highways, there has been renewed interest in private sector involvement in highway construction programs in recent years as highway budgets have been stretched. A variety of institutional models are being used including (1) concessions for the long-term operation and maintenance of individual facilities or entire highway systems; (2) purely private sector highway design, construction, financing, and operation; and (3) public-private partnerships in designing, constructing, and operating major new highway systems. While a few States currently account for the majority of private sector financing, many more States have expressed interest in the potential for greater private sector involvement.

The FHWA has a number of initiatives underway to help remove barriers to greater private sector involvement in highway construction, operation, and maintenance. These include workshops to provide States with resources to overcome barriers to PPP implementation; development of model legislation for States to use in drafting new or more flexible State laws and regulations; development of a PPP Web site containing links to many PPP resources, both domestic and international; case studies of how States and

Q. What is a public-private partnership?

A. A public-private partnership (PPP) is a broad term that collectively refers to contractual agreements formed between public and private sector partners, where the private sector partner steps outside of its traditional role and becomes more active in making decisions as to how a project will be completed.

local governments have overcome institutional barriers to PPP implementation; and creation of Special Experimental Program 15 (SEP-15) that provides States the flexibility to waive certain Title 23 rules and regulations on an experimental basis to evaluate alternative approaches to PPP project delivery.

More information on public-private partnerships can be found in the U.S DOT's December 2004 *Report to Congress on Public-Private Partnerships*, available at <http://www.fhwa.dot.gov/reports/pppdec2004/index.htm>.

Q. What are some examples of recent public-private partnerships in the United States?

A. Recent examples of public-private partnerships include the following:

- The lease of the Chicago Skyway (a major 8-mile-long bridge connecting two Interstates). A consortium of private firms paid the City of Chicago \$1.83 billion for the rights to operate and collect tolls on the Skyway for 99 years. The lease agreement establishes maximum toll rates and sets performance standards that must be maintained on the facility.
- The Virginia Asset Management program, through which the State has contracted with a private sector firm to provide long-term maintenance and restoration of 1,250 miles of Interstate Highways.
- The Dulles Greenway in northern Virginia. The design, construction, financing, and operation of this limited access highway has been entirely private, with operational responsibilities for the road scheduled to revert to the State after 42.5 years.
- The 4,000-mile Trans-Texas Corridor system, which will be built with public-private partnerships. An initial segment between Dallas and San Antonio will include private investment of \$6 billion to fully design, construct, and operate a four-lane toll road for up to 50 years, plus a payment of \$1.2 billion to the State for the toll facility franchise rights. The State may use these monies to fund road improvements or high-speed and commuter rail projects along the corridor.